# The Journal

OF THE

# Jamaica Agricultural Society.

The more people do the more they can do: he who does nothing renders himself incapable of doing anything: while we are executing one work we are preparing ourselves for undertaking another.

VOL. XXI. MAY, 1917. No. 5.


## BOARD OF MANAGEMENT.

The usual monthly Meeting of the Board of Management of the Jamaica Agricultural Society, was held at the Office of the Society 11 North Parade, Kingston, on Thursday, 19th April, 1917, at 11.40 a.m. Present—His Excellency Sir Wm. H. Manning, K.C.M.G., C.B. (presiding), Sir John Pringle, K.C.M.G., Hons. P. C. Cork, C.M.G., D. Campbell, S. S. Stedman, R. P. Simmonds, Messrs. R. Craig, A. W. Douet, A. W. Farquharson, H. Q. Levy, A. C. L. Martin,, Conrad Watson, Rev. W. T. Graham, and the Secretary, Jno. Barclay. Sir Francis Watts was present on invitation, and Mr. William Watson as a visitor.

*Apologies for Absence.*—Apologies for absence were received from Messrs. Dougall, Muirhead, Roxburgh and Woolliscroft.

*Confirmation of Minutes.*—The Minutes of the previous Meeting having been printed and circulated, were taken as read and confirmed.

*Statement of Accounts.*—The usual monthly Statement of Accounts was submitted.

*Notices of Motions.*—Mr. Graham gave notice that at the next Meeting he would move the following:—

(*a*) *Prize Holdings Competition.*—

"That the prize-holdings competition be resumed and if possible, extended with the view of encouraging the production of foodstuffs and of preventing any further diminution of interest in the valuable prize-holding scheme which was bringing about real improvements in the holdings of the people and which was so much appreciated by them."

(*b*) *Praedial Larceny.*—

"Seeing that praedial larceny has become widespread, and is an alarming evil, I respectfully ask if the Government, in the interest of the agriculture of the island, will promptly try to lessen this evil by adopting the following methods of dealing with it, viz: to provide on the simplest lines, labour settlements for habitual praedial thieves, this being one of the unanimous suggestions of this Board; and until such settlements are provided, will the Government adopt drastic measures in dealing with able-bodied praedial thieves, such as publicly catting the worst ones?

"Will the Government enact a law to deal with neglected juveniles on the lines unanimously suggested by this Board for touching the main source of supply of praedial thieves?

"Will the Government cause arrangements to be made by which prisoners who are sent to the short term prisons will be put to hard labour, in prison garb, on public works, such as carrying and breaking stones for the public roads under a guard, say of a corporal and two or more district constables or authorized persons, and not be allowed to have an easy time in the short term prisons?"

A discussion on the subject of Prædial Larceny ensued. It was held that the report and recommendations of the Special Committee of the Society, sent to the Government in September 1914, which had been held over to be dealt with by the Legislative Council after the war, as being controversial, should be dealt with at once, as the country was again thoroughly aroused over the increasing prevalence of this crime.

It was decided to deal with the matter fully at the following Meeting.

As arising out of the previous Minutes, the following matters were considered:—

(*a*) *Citrus Regulations.*—In reply to Mr. Muirhead's question raised at the last Meeting, a letter was read from the C.S.O., No. 4641/5406, dated 4th April, 1917, enclosing a copy of correspondence between the Director of Agriculture and the U. F. Co. on the subject of the standard of maturation imposed by the U. S. A.

Another letter also was read from the C.S.O. No. 3901/3551/17, dated 20th March, 1917, enclosing copy of letter from the Director of Agriculture, covering a memo from the Deputy Island Chemist, as follows:—

Government Laboratory.

Director of Agriculture,

Herewith the results of the tests of the juices of Oranges and Grapefruit.

Some of the growers from whom samples were requested have no fruit at all at present, others have no Oranges fit for shipment.

They all drew attention to the fact that this is not the proper time of the season for carrying out these tests and that the months of August and September when they are trying to get early fruit on the American market are the most crucial ones.

The Blue Mountain Grapefruit fail to come up to standard, and one lot of greenish fruit from Mr. Muirhead's box of Grapefruit was below par.

On the whole it appears that the standard for Grapefruit is perfectly fair, otherwise as Mr. Wigan points out the shippers would soon have heard about it for he has had no rejectments out of 2,750 boxes while thousands of boxes of Porto Rican fruit have been condemned (propobably due to hurricane).

(Intd.) R. S.

27/2/17.

Total Solids Acidity. Corrected Brix.
Calculated as anhydrous Citric Acid per 100 parts by weight of juice.

ORANGES.

| Source. | | T. Solids. | Acidity. | | Ratio of T. S. to Acidity | |
|---|---|---|---|---|---|---|
| Blue Mountains | .. | 10.15 | 0.6528 | | 15.4 | 1 |
| | | 10.8 | 0.6484 | | 16.6 | 1 |
| | | 15.7 | 0.6879 | | 15.7 | 1 |
| | | | | Average | 15.9 | 1 |
| U. F. Co. | .. | 12.25 | 1.100 | | 11.1 | 1 |
| | | 10.95 | 0.8107 | | 13.5 | 1 |
| | | 10.25 | 0.8129 | | 12.6 | 1 |
| | | | | Average | 12.4 | 1 |
| E. W. Muirhead | .. | 13.2 | 1.096 | | 13.2 | 1 |
| | | 13.2 | 1.146 | | 11.5 | 1 |
| | | 12.7 | 1.100 | | 11.5 | 1 |
| | | | | Average | 11.7 | 1 |

GRAPEFRUIT.

| | | | | | |
|---|---|---|---|---|---|
| Blue Mountains .. | 9.15 | 1.471 | | 6.2 | 1 |
| | 9.15 | 1.496 | | 6.1 | 1 |
| | 9.45 | 1.556 | | 6.0 | 1 |
| | | | Average | 6.1 | 1 |
| U. F. Co. .. | 11.2 | 1.476 | | 7.3 | 1 |
| | 10.4 | 1.219 | | 8.5 | 1 |
| | 9.9 | 1.1196 | | 8.2 | 1 |
| | 11.0 | 1.133 | | 9.7 | 1 |
| | 10 4 | 1 379 | | 7.5 | 1 |
| | | | Average | 8.2 | 1 |

GRAPEFRUIT.

| | | | | | |
|---|---|---|---|---|---|
| E. W. Muirhead .. | 11.0 | 1.210 | | 9.1 | 1 |
| | 11.3 | 1.265 | | 9.0 | 1 |
| | 11.9 | 1 267 | | 9.4 | 1 |
| | 11.5 | 1 679 | | 6.8 | 1 |
| | 11.1 | 1.475 | | 7.5 | 1 |
| | | | Average | 8.36 | 1 |
| T. H. Sharp .. | 11.5 | 1.290 | | 8.9 | 1 |
| | 11.0 | 1.181 | | 9.3 | 1 |
| | 11.1 | 1.228 | | 9.0 | 1 |
| | 11.2 | 1.200 | | 9.3 | 1 |
| | | | Average | 9.1 | 1 |
| A. E. Wigan .. | 10.0 | 1.048 | | 9.5 | 1 |
| | 12.0 | 1.325 | | 9.1 | 1 |
| | 10 0 | 1.037 | | 9.6 | 1 |
| | 10 1 | 1.123 | | 2.0 | 1 |
| | | | Average | 9.3 | 1 |
| Average of Oranges .. | .. | .. | .. | 13.3 | 1 |
| Average of Grapefruit .. | .. | .. | .. | 8.21 | 1 |
| U. S. A. standard for Oranges | .. | .. | .. | 8. | 1 |
| U. S. A. standard for Grapefruit | .. | .. | .. | 7. | 1 |

(Intd.) R. S.,
D. I. C.

The Secretary said that Mr. Muirhead who had particularly asked for the information was not present at the meeting but he would be furnished with it in the minutes.

(*b*) *Society's Employees Enlisting.*—The Secretary said there were three Agricultural Instructors who were desirous of proceeding on active service, and acting on instructions from the Board of Management, he had communicated with the Government as to what facilities would be given to them for enlisting. He had received a reply from the Acting Colonial Secretary stating that the Governor had decided that the employees of the Agricultural Society would be put on the same footing as Government employees who enlisted, and the Legislative Council had made an additional grant to enable the Society to give the Instructors the necessary allowances.

Two of the Instructors who desired to enlist were married men with children and both had already brothers in the Contingents.

In view of the efforts which were now being put forward for the development of the food supplies of the colony, it was thought the services of the Instructors would probably be more useful in Jamaica, however.

The Board agreed to leave it to each Instructor to decide whether he would enlist or not.

(*c*) *Imperial Trade Conference.*—A letter was read from the C.S.O. as follows:—

No. 4291-4706. 28th March, 1917.

"I am directed by the Governor to acknowledge the receipt of your letter, C.S.O. No. 145, dated the 16th instant, embodying a resolution passed by the Board of Management of your society at a meeting held on the 15th idem, urging that steps may be taken with a view to obtaining direct representation of the West Indies at the Imperial Trade Conference, and to acquaint you in reply for the information of your society, that the Secretary of State for the Colonies has stated that he will represent the colonies and protectorates at the conference.

2. I am to say, however, that the matter is to be discussed in the Legislative Council and that His Excellency will duly forward to the Secretary of State for the *Colonies any recommendations that may be made during that* discussion, together with a copy of the resolution of your society now under acknowledgment.

(Sgd.) G. M. WORTLEY,
Actg. Asst. Colonial Secretary.

(*d*) *Lumber on Crown Lands.*—The following letter from the C.S.O. was read:—

No. 5200-4817. 17th April, 1917.

"I am directed by the Governor to acknowledge receipt of your letter C.S.O., No. 150, dated the 16th ultimo, further in regard to the question of the sale of fallen timber on Crown Lands, and in reply to inform you that His Excellency has caused enquiry to be made with a view to giving consideration to the suggestion of the Board of Management of your society, conveyed in the 3rd paragraph of your letter, and that His Excellency is satisfied that it would not be expedient to approve of the course suggested."

(Sgd.) G. M. WORTLEY,
Actg. Asst. Colonial Secretary.

Mr. Levy said that he regretted the matter should have come to such an end. He would like to emphasise his remarks made at the last meeting. He considered it a shame that so much lumber was allowed to go to waste in the Crown lands, especially when it was considered that the Government were only asked to sell the fallen trees.

The President said that he had made enquiries into the matter, and he was satisfied that if the proposal was adopted in one case, it would have to be adopted in many cases. The moment this was done, he was informed, for every tree sold another growing one would be destroyed, and it was not possible to supervise the sales. If he could have seen any possible means of getting over the difficulty of selling fallen lumber without loss of other trees, he certainly would have adopted the proposal. The matter would probably be brought up again, and if any practical solution of the difficulty was submitteed, he would agree to the proposal being carried out.

Mr. Levy said he would formulate a scheme which he hoped would solve the difficulty.

(*e*) *Dry Dock.*—The following letter from the C.S.O. was read:—

No. 4726-3897. 7th April, 1917.

"I am directed by the Governor to acknowledge the receipt of the copy of the resolution passed by the Board of Management of your Society in regard to the establishment of a dry dock in Kingston Harbour, which accompanied your letter, C.S.O., No 140, dated the 2nd ult. (March), and in reply to refer you to answer given in the Legislative Council to a question on the subject which was asked by the Hon. E. A. H. Haggart in March 1912, and to say that His Excellency, though conscious of the value of some of the arguments adduced, is not prepared to take any action in the matter at the present time.

The answer which the Colonial Secretary gave to Mr. Haggart at the time is as follows:—"This matter has been considered by the Government, but it is not deemed that the public advantages of having such facilities would be great enough to justify the Governor in proposing to pay for providing them. It is accordingly not proposed to advertise for tenders."

(Sgd.) G. M. WORTLEY,
Actg. Asst. Colonial Secretary

(*f*) *Food Supply.*—The following letter from the C.S.O. was read:—

No. 3902-3763. 20th March, 1917.

"I am directed by the Governor to acknowledge the receipt of your letter, C.S.O., No. 141, dated the 2nd instant, forwarding a copy of a report by the Food Supply Committee of your Society, in regard to certain foodstuffs that might be supplied to the United Kingdom from this Colony, and to inform you that in accordance with your suggestion, a copy of the report with copies of your covering letter and of your letter, C.S.O., No. 138, dated the 26th ultimo, have been transmitted to the Secretary of State for the Colonies."

(Sgd.) G. M. WORTLEY,
Actg. Asst. Colonial Secretary.

A letter was also read from the Secretary of the Royal Society, London, as follows:—

13th March, 1917.

"I am much obliged to you for the trouble you have taken with respect to the possibility of obtaining supplies from Jamaica. The letter will be laid before the Committee at a meeting on Friday next. You will realise from the accompanying memorandum, which is merely a provisional draft, that our information, so far, has led to some misconception. I should be more hopeful of banana chips than of the sweet potato, because I imagine, for a given food value, the tonnage space occupied by the former would be considerably less than the latter. When the samples, which you have been good enough to send, arrive it will be possibie to determine these facts experimentally."

(Sgd.) W. B. HARDY.

The Secretary said that he would like to take up at this stage an item lower down on the Agenda, under the heading of Seeds and Plants:—

(*i*) He presented the following report on the year's business of the Society in the handling of seeds and plants, etc:—

| | Hurricane Relief. Free Bshls. | Sold Bshls. | Total Bshls. |
|---|---|---|---|
| Cowpeas | 170 | 80 | 250 |
| Red Peas | 187 | 23 | 210 |
| Guinea Corn | — | 23 | 23 |
| Black Eye Peas | 103 | 3 | 106 |
| Overlook Beans | 1 | 1 | 2 |
| Seed Corn | 95 | 330 | 425 |
| Bengal Beans | — | 6 | 6 |
| Gungo Peas | 1 | 89 | 90 |
| | 557 | 555 | 1112 |
| | Bar. | Bar. | Bar. |
| Seed Potatoes | 62½ | 382½ | 445 |
| | Ozs. | Ozs. | Ozs. |
| Vegetable Seeds | 777 | 2223 | 3000 |

He further said that he had handled these items under the most difficult circumstances, but if the seed supply business was to be continued on the same scale he should be better equipped to give satisfaction to himself as well as to others. The premises were not fitted for storing seeds on any scale and he had to make shift in the best way possible. There was always risk of causing double the labour to prevent loss that could be avoided if proper provision were made for handling articles of the kind.

(*ii.*) *Letter from Vere Branch.*—The Secretary said he had been sent a copy of a circular issued by the Vere Branch to the large estates in that district asking the proprietors of Sugar Estates in Vere to devote a certain amount of their land to the cultivation of quick growing food crops.

The Secretary said he had been informed that only Morelands had responded with 150 acres and he had supplied peas to be furnished to the labourers for planting.

Mr. Farquharson said that he had not seen the letter addressed to Amity Hall, but he would make enquiry about it in Vere.

(*iii.*) *School Children's Competition.*—The Secretary reported that he was now receiving the samples of Red Peas grown in connection with the competition of the School Children, which would be judged and reported on later in full.

(*iv.*) *Dried Sweet Potato and Banana Chips.*—The Secretary submitted samples of dried sweet potato and banana chips forwarded by Mr. Cradwick, from St. Mary. These were prepared by small settlers in his district. The idea was that if we could supply foodstuffs to the United Kingdom, in these days of shortage of shipping, such foods could be sent in the dried form. He was sending samples of the potato chips to the Food Supply Committee, London : the banana chips had already been sent.

The Governor said that if large samples were sent they should be shipped in exactly the same way as the bulk would be shipped.

The Board considered the samples very satisfactory, and the Secretary was instructed to thank the parties who had taken the trouble to prepare them and to submit them to the Board through the Instructor.

(*g*) *Coconut Diseases.*—A letter was presented from the C.S.O. No. 3898/2807/17, dated 20th March, 1917, enclosing report from the Microbiologist on cases of coconut diseases submitted to him through the Instructors of the Society. These papers were directed to be circulated to the Board.

Mr. Martin said that in this connection, he would like to point out that coconut diseases were known to exist in districts which were not visited by the members of the Technical staff. He thought the Director of Agriculture should be apprised of these cases, and that arrangements should be made that the scientific officers visit these places.

The Secretary said that all cases reported to him were notified to the Director of Agriculture immediately.

*Letter from Turks Island.*—The Secretary read letter from Turks Island as follows:—

No. 120/1917. 14th March, 1917.

Your letter of the 16th ultimo, No. 5925, is to hand and contents noted.

It would have greatly facilitated matters had your Board of Management definitely indicated the terms on which this Society might effect affiliation, for the question could then have been discussed as one of recurrent expense and settled here.

On the afternoon of the 12th inst., at my request, the Commissioner forwarded a telegram to the Colonial Secretary, of Jamaica to be decoded as follows:—"Will you enquire of the Secretary of the Agricultural Society (message begins) referring to your letter of the 16th February, No. 5925, will you give 50 copies of the JOURNAL free of cost. If so what will be the cost of supplementary fifties forwarded by mail."

It is now within a few minutes of the closing of an outgoing mail and no reply has been received.

Our Committee is endeavouring to interest a large number of people in the objects of the Society. The number of members is now approximately 350, and should reach 400 before the end of the year. I do not anticipate, however, that quite so large a number will requalify next year.

You are quite right in supposing that in many instances there are two, and occasionally three, members in one household, and it would be possible to economise copies of the Journal in these instances. Your suggestion that copies be placed in the local reading room, or a limited number circulated, is not practicable, for the members do not reside in a limited area. Members are fairly distributed throughout the Islands and the several settlements are, 10, 20, 35, 42, 48, 54, 60 and 70 miles distant from Grand Turk, and in most cases the communication is by boat.

It is particularly desired that the publication shall be put in every household, for the people are all able to read and understand anything applicable to local surroundings, and it is hoped by this means to keep alive and vigorously growing an awakened interest in their main source of livlihood.

I should be grateful, however, for the forwarding as from January, 1917, of such copies of the Journal as your Board will give this Society on ordinary affiliation fee of one penny per member; the matter of the payment for additional copies can be arranged as soon as we are advised of the cost of the same.

(Sgd.) H. H. HUTCHINGS, Honorary Secretary.

Mr. Craig said the matter ought to have come before the Instructors Committee first for enquiry and report to the Board.

The Secretary said he had taken it that the Turks Island Society had been affiliated at last meeting and that it was the matter of the supply of JOURNALS for such a large membership out of the Island that was left over for consideration.

The letter was referred to the Instructors Committee for consideration and report.

*Registration of Titles.*—The Secretary said that Mr. Cradwick states in his report that at his meetings in St. Mary, he asked those present how many had Registered Titles. He reported that the number of pieces of land held by members of Branches at the meetings was 305, and Registered Titles held for these 49.

*Visit of Entomologist to St. Mary re Woodpeckers.*—A letter from Mr. Cradwick was read asking when the proposed visit of the Entomologist to St. Mary would take place, so that he might make arrangements for visits to the localities most likely to be interesting to him, and helpful to the local agriculturists.

The Secretary said that at the previous meeting a letter was read from the Colonial Secretary, stating that the visit referred to would be made in April, but he had heard nothing further.

He was directed to remind the C.S.O. of this.

The following letters from the C.S.O. were submitted:—

(*a*) *Fumigation of plants.*

No. 4680-1393. 5th April, 1917.

With reference to the correspondence ending with your letter, C.S.O. No. 126, dated the 24th January last, I am directed by the Governor to transmit for the information of the Board of Management of your Society the accompanying copies of a Proclamation by His Excellency under the Customs (Importation Prohibition) Law, 1916, Law 23 of 1916, prohibiting the importation of banana, plants, suckers, etc., and of an Order by His Excellency under Section 4 of the Protection from Disease (Plants) Law, 1915, Law 3 of 1915, relative to the conditions under which plants, etc., may be imported from certain quarters.

(2) With regard to paragraph two of your letter above referred to, I am to inform you that Mr. Cousins states that he was the first person to carry out the fumigation of plants in the United Kingdom with Hydrocyanic Acid and to work out the conditions essential to success—in 1899—and also that the treatment of plants by this method during the past sixteen years has been under his direction and has worked quite successfully.

(Sgd.) G. M. WORTLEY,
Actg. Asst. Colonial Secretary.

(*b*) *Notices in the Jamaica Gazette.*—

Mo. 4692-5857/17. April 5th, 1917.

I am directed by the Governor to acknowledge receipt of your letter, C.S.O., No. 158, dated the 31st ultimo, and to say that your suggestion that your Society should be informed by letter of any notices appearing in the Jamaica Gazette which concern the Agricultural Society will be carried out.

(Sgd.) G. M. WORTLEY,
Actg. Asst. Colonial Secretary.

(*c*) *Panama Disease.*—

No. 4074-5034. March 22nd, 19171.

I am directed by the Governor to transmit for the information of your Society the accompanying copy of a letter from the Director of Agriculture intimating that an outbreak of Panama Disease of Bananas had been reported near Port Antonio.

(Sgd.)
For Actg. Colonial Secretary.

*Banana Borer Weevil.*—The Secretary read a letter from the C.S.O., No. 5174-6461, dated 16th April, 1917, enclosing a copy of a memorandum by the Imperial Commissioner of Agriculture for the West Indies of his views on this subject. The memorandum was read—(See page 169)

Mr. A. W. Farquharson said Sir Francis Watts might state how far he thought it necessary that the Order which had been passed by the Governor in Privy Council relative to this borer, might be modified.

Sir Francis Watts explained more fully some of the points touched on in his memorandum, and pointed out that a good deal depended on the Instructors, so far as the small cultivators were concerned, in getting them to take such measures as would prevent the spread of the borer. He also thought the bigger planters, who expected to make money, of course, out of banana cultivation, could be trusted to do what was necessary. Of course, if an intelligent appreciation of the situation was not taken, then it would be time for the authorities to act.

Sir John Pringle said the matter might be referred to a committee, and Sir Francis Watts would then have the whole facts before him, so as to enable him to say how far the order might be modified.

The President: Sir Francis is leaving on Saturday.

Sir Francis Watts said before giving any final decision in the matter, he should like to confer with the technical members of his staff, which he did not have an opportunity of doing, of course, when he prepared his memorandum.

It was agreed that Sir Francis Watts should take the order with him, and after he had consulted with the technical members of his staff in Barbados, he would be able to send them his views finally in the matter.

The President stated that in the meantime all action on the part of the Government would be stayed until they had heard from Sir Francis Watts. He, however, desired to point out that in passing the order and enforcing it, the Government had done what was right and proper. On behalf of the Government and the Society, he desired to thank Sir Francis Watts for the services which he had rendered in the matter.

The Secretary also presented a special report from the Instructor for St. Andrew, of his visit with Sir Francis Watts to the districts of St. Andrew affected by the borer.

A letter was also read from the Colonial Secretary, dated 17th April, 1917, as follows:—

No. 5199-5126. 17th April, 1917.

Sir,

I am directed by the Governor to acknowledge receipt of your letter, C.S.O., No. 153, dated the 21st ult., relative to the question of the enforcement of the terms of the Black Weevil Borer (Bananas) Order 1916, No. 2, in St. Catherine, and in reply to transmit for the information of your Society the accompanying copy of a minute by the Director of Agriculture and to say that since the matter of the enforcement of the Order on the properties referred to in your letter is now *sub judice*, the establishment of the legal position must be awaited.

(Sgd.) ROBT. JOHNSTONE,
Actg. Colonial Secretary.

*Agricultural Shows.*—The Secretary reported that the Stewart Town Branch had held a small show of food stuffs on their own account as an evidence of the quality of the products that could be grown in that locality, which had proved to be very successful.

With a view to encouraging the planting of grains and other small crops, the May Pen Branch had decided to hold a show in September next.

A copy of the proposed prize list has been submitted to him and revised.

*British Empire Producers Organization.*—A letter from the Secretary of the West India Committee was read enclosing the latest report of the British Empire Producer's Organization, and another letter from the same gentleman acknowledging receipt of the pledge of the Board of Management of this Society to support the British Empire Producers' Organization and saying that a copy of this resolution had been handed to the British Empire Producers Organization.

The Secretary said that Mr. Craig had written him pointing out that this Society had agreed to contribute to the funds of the B.E.P.O. as far as lay in its power, and suggesting that surplus funds might be utilised for the purpose.

It was proposed and agreed that as it was so late the other items on the Agenda be held over until the next meeting.

The Secretary asked that the new members might be elected.

*New Members.*—The following new members were elected:—R. Nosworthy, Kingston, A. G. Quayle c/o Fruit Despatch Co., Pier Pratt Street, Baltimore, Maryland, U.S.A.; J. O. Mason, Orange Bay; O. G. Brown, Wolmers School, Kingston; A. H. Rogers, Belvedere P.O.; T. C. Golding, Avon Park, Cross Roads P.O.

The meeting then adjourned until the 17th of May, at 11.40.

:o:

## BANANA BORER.

***Memorandum by Sir Francis Watts.***

1. So far as I can gather from the papers on the subject and from discussing the questions with many people directly interested in the matter, coupled with observations made in the field, I incline to the opinion that the Black Weevil Borer of Bananas, while capable of creating a certain amount of trouble in banana fields, is not such a serious pest as to cause very great alarm, but that steps can be taken by careful cultivators to keep it under control and prevent its being a grave menace to the banana industry.

2. In ordinary cases it would appear that the attack of the Weevil is directed to the bulb of the banana plant, that the adult Weevil usually lays its eggs on the surface of the bulb, below the ground level; these eggs hatch to small burrowing grubs which penetrate the bulb, progressively passing through the larval stage to that of the mature weevil, the whole of these changes taking place in the bulb. The mature weevils emerge, the females then seek fresh places for egg-laying and the whole process is repeated: the cycle appearing to take about a month.

3. From careful consideration of the recorded facts and from direct observations I have formed the impression that the tendency of the Weevil is to attack those parts of the bulb where the tissues for any reason lack full vitality, that is to say, those tissues which are not in a state of vigorous growth but may be regarded as senescent: the Weevil does not appear to begin its attack on actually decayed tissue.

4. The banana plant throws up a "stem" which bears a bunch of fruit; this stem is then cut down and decays in the ground: from its base new suckers arise which, in turn, become bearing stems and these in the regular course are cut down; this process being repeated year after year. We thus have a succession of old bulh, fruiting bulb and sucker.

5. The evidences of weevil attack in infected districts are usually to be found in the old bulb which is in a dying condition, thence the grubs tend to pass into the base of the fruiting stem and in some cases from this into the base of the young sucker.

6. In cases where the bananas do not appear to be badly diseased, except by attack of the Weevil, there appears to be little tendency for the grubs to penetrate into the more vigorous or actively growing part of the bulb. The conditions may be exemplified by the observations made at my instance of 100 stools of bananas growing in an abandoned field in St. Catherine's Parish, the results being set out in the following table:—

*Results of examination of 100 banana stools.*

Old stools or bulbs infected 100; growing bulbs or plants infected 75; growing plants not infected 25.

*Extent of boring,*

Growing plants infected at base 51; growing plants infected on side near old stool 56; growing plants infected on side away from old stool 14; growing plants infected in growing bud 0; growing plants infected towards centre of bulb also superficially infected, 10; growing plants infected superficially, 75; growing plants with young suckers attacked, 49; growing plants with young suckers infected, 1.

7. This appears to represent the conditions where bananas have been grown with some degree of care but have been abandoned on being found badly infected.

8. On examining the infected bananas in the St. Andrew's district, e.g., Stony Hill, Golden Spring, Mount James, Mount Pleasant, etc., a somewhat different condition seems to exist. In these places the bananas seen were chiefly those grown by peasants, they appeared to be neglected and, in many instances, badly infested with the fungus Marasmius semiustus, the dead leaves usually hanging down in a shaggy mass and the leaf-sheaths matted together by the fungus.

9. In these circumstances the attacks of the weevil are much deeper and more extensive than in the conditions observed in St. Catherine. Even here it was seldom seen that a weevil boring extended into the growing point at the apex or central point of the bulb whereby the so-called pipe was injured. Generally the bulbs were attacked at the base with a tendency, in a good many cases, for the borings to extend deeply and also to extend into the bases of the young following suckers.

10. The impression that I formed in these cases was that the more extensive and deeper nature of the attack was connected with the general lack of vigour of the plants, due possibly to a number of causes, including neglect in cultivation and fungus (Marasmius) attack.

11. If these views are correct it will follow that careful cultivation and the removal of fungus-infected material will tend to lessen the severity of weevil attack in a marked degree.

12. It will not be difficult to put these views to direct test, for if, in a weevil infested area, a small plot is planted in bananas and thoroughly manured and cultivated in such a manner as to ensure freedom from Marasmius or injurious influences other than the Black Weevil Borer, the plants in this area should show marked resistance to weevil attack, which should be principally found in the old dead, or dying bulb, but should not be found deeply attacking the growing, fruiting bulb; such attacks as occur here should be superficial and not tending greatly to penetrate to the centre of the fruiting bulb. The young following suckers should be attacked very slightly if at all.

13. It should be easy to carry out experiments of this nature at a number of places and to record and scrutinize the results carefully. I recommend that this may be done and careful records kept.

14. From the sequence of events described above it would appear o be impossible to eradicate the Black Weevil Borer from a district without eradicating the banana, for every growing stool of bananas kept for the production of fruit affords a breeding ground for the insect, and no direct destruction of the insect can be accomplished without injuring or destroying the banana plant. If, however, I am correct in my

surmise that the insect is attracted to unhealthy or senescent banana tissue, then careful handling of the growing bananas to ensure as perfect health as possible, coupled with careful cultivation, will lessen the quantity of such attractive tissue in the banana fields and it is conceivable and probable that the insects will decrease in number.

15. Attention may be drawn to the fact that the allied weevil, Sphenophorus sericeus, known as the Striped Weevil Borer, which is found on bananas, is known as an insect attacking sugar canes; for some time it was supposed that this weevil was a direct pest of the sugar-cane, but careful observation has led scientific workers to conclude that this insect only attacks unhealthy cane tissue; it attacks those portions of the cane that have been injured by rats,or have been damaged mechanically and those that have been affected by fungus diseases. Its presence is now recognised as being indicative of some antecedent injury. Seeing that Sphenophorus sordidus and Sphenophorus sericeus are allied forms, it is not unreasonable to think that there may be some similarity of habit.

16. It would seem that there have been causes favouring the Black Weevil Borer, in that there have been in Jamaica many successive storms in recent years, as a consequece of which there have been present in many banana fields large quantities of injured tissue, which, I believe, is attractive to the insect. In this connection it should be noted that in addition to injuries to the stems of the bananas, storm damage will probably inflict some injuries upon the roots whereby the vitality of the bulbs will be lowered and their susceptibility to weevil attack increased.

17. Similarly in Fiji bananas are exposed to frequent storm damage, and this may have a bearing on the prevalence of weevils at particular times in that colony.

18. As showing the manner in which the number of weevil borers present in a given locality may vary from time to time, I may quote a statement made in October, 1916, by Mr. F. P. Jepson, Government Entomologist of Fiji, in a communication, prepared for the information of the Government of Jamaica. He writes: "A recent application for a large number of grubs of the borer for experimental purposes, was made by the overseer of the Nasinu Experimental Station. In September a search was made which resulted in the discovery of two larvae only and a few beetles and in October a second search produced only three beetles and no grub . Seven or eight years ago a similar application would have resulted in the supply of grubs in almost any numbers."

19. In the same communication Mr. Jepson states that it is extremely difficult to arrive at any definite conclusion whether the weevil borer is on the increase or decrease in Fiji; some planters hold the view that it is decreasing, while others doubt this, but, he states, it is certainly true that one hears less of the damage caused by this pest at the present time (October, 1916) than formerly, but whether this is due to a decrease in the numbers of the beetles or to improved methods of cultivation it is difficult to say.

20. I am unable to arrive at any conclusion from the evidence before me whether Sphenophorus sordidus is a relatively recent introduction into Jamaica or not; it is quite possible that it is,but there is evidence of its existence in neighbouring countries for many years; it has been known to occur in Brazil for more than seventy years; it was described from Guadeloupe in 1878 and 1879.

21. It is an insect of very wide distribution and is known to occur in Guadeloupe, Martinique, Dominica, Trinidad, Brazil, Costa Rica, Philippines, Fiji, Borneo, Sumatra, India, Straits Settlements and Queensland, and I have no doubt that the attention it is now receiving will lead to it's being recognised in many other places.

22. It is worth noting that the insect is one which tends to evade observation; the mature insect appears to fly by night and to hide by day. It is not attracted by light and so is not often, if ever, seen around the lamps in houses, as is the case with many insects. The mature insects as well as the larval and pupal forms spend most of their time hiding in the parts of the banana below ground or in the soil and so are not readily seen; they do not force themselves upon the attention of casual observers, I should not be surprised, therefore, if careful search for their borings in apparently healthy banana bulbs leads to the conclusion that these weevils are more widely spread in Jamaica than is at present recognised. It will be of material service if agricultural officers and planters will make careful search for borer tunnels, as well as for the insects themselves, in any banana bulbs that are being dug up in various parts of the island and carefully record the results of their observations, whether positive or negative. These observations might usefully be communicated to the Director of Agriculture, and I should be glad if they are trans-

23. I have had but little time to obtain first-hand information from banana growers as to the effect upon the fruit production of weevil borer attack, but such enquiries as I have been able to make lead me to conclude that those growers who maintain their fields in a state of good cultivation and prevent the attacks of such fungus diseases as Marasmius semiustus do not regard the weevil as being a gravely serious pest; they claim that they get a good production of fruit even in areas where it is known that the insects are present. On the other hand in cases where cultivation has been imperfect and Marasmius has existed, I have learned that little fruit has been produced and that fruit of little value.

24. It would thus appear that the best way of dealing with the trouble is rigidly to practise methods of clean cultivation coupled with all such things as tend to keep the plants healthy and free from fungus diseases. With the reduction of unhealthy banana tissue it is likely that the insects will diminish in number.

25. In cases where there is severe, deep-seated infestation of the bulbs of the bananas, which will, I think, usually be found where marasmius is abundant and cultural methods imperfect, it will be well to eradicate the bananas. This may probably be effected through the advice of the Agricultural Instructors, who will be able to induce growers to get rid of unthrifty bananas and substitute some profitable crop.

26. As at the present time knowledge concerning the Weevil borer is still very imperfect and the subject of much conjecture, it will, I think, be desirable to maintain the belt of land free from bananas that I understand exists across the valley of the Wag Water River, with a view to preventing the spread of the insect into the banana, plantations lower down the valley which, at present, are thought to be free from it.

27. As regards the methods of destroying Weevil infected bananas. From what I can gather from entomologists it would seem that Sphenophorus sordidus, at least in ordinary circumstances, only lays its eggs and passes the grub and larval stages in the bulb of the banana : the leaves and stem have, therefore, little significance in connection with the pest. Where weevils are found on stems they are probably only hiding and not egg-laying. This being so, it would seem that the destruction of bulb tissue is the matter of primary importance.

28. When a field of abandoned bananas is to be destroyed, it would appear sufficient to cut down and slice up all the stems in the usual manner, spreading them on the surface of the ground or burying them as the practice of the district dictates. The bulbs should then be dug out and cut into thin slices of about one inch, or less, in thickness; these slices should then be spread over the ground and stirred at intervals to promote decay.

29. The sliced bulbs will, it is expected, attract the mature weevils which will lay their eggs upon the slices. The eggs thus laid are not likely to produce mature weevils, for the sliced bulbs will have passed into a condition in which the grubs will be unable to live and pupate some time before the insects have developed to that extent. The manner of slicing the bulb must be undertaken to secure this end: little practical experience will show how thin the slices must be cut in order that they may decay before mature weevils can be developed in them.

30. It is possible that the insects may be attracted to the sliced bulbs in such numbers as to warrant their being collected by hand. and possibly children may be employed to advantage in doing this. In this connection careful observations are needed to ascertain at what time of day and in what situation the insects may best be found. Experience has shown that, with patience and a little directing children soon become very expert at this kind of work.

31. If it is thought desirable and necessary, there should be little difficulty in ensuring the destruction of abandoned bananas in the manner now indicated under the Protection from Disease (Plants) Law, 1915.

32. Banana growers should be advised and encouraged to use only material free from weevil infection when replanting their fields; the careful selection of healthy planting material will be recognized as wise and necessary. The interesting statement has been made that by completely immersing infected banana bulbs in water for about 36 hours all the weevil borers in them are killed. Further observations on this point are desirable: if the observations are confirmed, banana growers should adopt this simple measure of precaution as a matter of regular routine.

33. There are good grounds for considering that much more work by way of investigation remains to be done before it can be felt that adequate knowledge exists concerning the Black Weevil Borer and its work. As already stated, it is desirable that careful records shall be made as to the extent to which the insect is present, both in what are regarded as sound or vigorous bananas as well as in unhealthy ones, and the extent to which the quality of the fruit is affected. More knowledge is wanted with regard to the natural enemies already at work controlling the insect

in Jamaica, there are doubtless many such agencies, including birds, toads, lizards, insects and fungi. The question of introducing a histerid beetle from Java has already had consideration, and I gather that steps are contemplated to effect this. It is of importance that further investigations should be made to learn what connexion, if any, exists between the presence of the Black Weevil Borer and banana plants that lack vigour or are otherwise diseased. Further observations should be made as to the existence of the insect in various parts of the island and also as to the manner in which it may spread from place to place. Careful search should be made to ascertain whether the insect confines its attack to bananas and plantains, or whether it is capable of living upon other plants, and many similar problems.

34. I trust that these general observations may tend to disentangle a very complicated subject and may assist those who are concerned with the matter in the task of considering and sifting the opinions and evidence available: I cannot but feel that the views I now put forward are tentative and that they require supporting by a considerable amount of experimental evidence before they can be regarded as conclusive. It is obvious that during the course of a short stay in the colony in which my time has been busily occupied with other matters, I am unable to undertake, or supervise, the work that still remains to be done to bring the matter to a stage when definite and final opinions may be looked for.

(Sgd.) FRANCIS WATTS,
Commissioner of Agriculture for the West Indies.

7th April, 1917.

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## FOOD REQUIREMENTS.

In addition to putting forth effort to raise more foodstuffs here, it is necessary to take steps to keep or store some of these safely between crops. We have written many articles on this subject in past JOURNALS and may re-publish one or two dating as far back as 1903. Another important point is that there should be the knowledge how to use our foods to the best advantage. Some knowledge of the composition of various foods would always be useful knowledge, but at the present time it is very necessary knowledge, indeed, in order to enable one to get the best value to the body from the money expended on food; and also to enable growers to know what variety of crops it is best to grow from this point of view. We have had articles on this subject before. We have written on farine and meal made from cassava; cornmeal, banana meal, breadfruit meal, all crops that are plentiful at some seasons and scarce at times. Green bananas are usually more plentiful from August to November, when there is least demand and small prices for shipping, while usually in the Spring they are scarcer and demand higher prices. The idea is to prepare these foods when they are plentiful so that the product may be stored and used between seasons when they are scarce or unobtainable. However, information on the subject will probably be more readily appreciated and acted upon at the present time, and articles are published on the storing of Breadfruit, Sweet Potatoes and Cassava.

"The Agricultural News," Barbados, of 14th February last, had a useful article on Human Food Requirements, part of which we reproduce here:—

It is recognised that the materials used as food fulfil two main requirements: they serve to build up and maintain the body structure, and afford the source of energy which manifests itself in body movements and in work. Physiologists have found that two main classes of food substances are essential to these processes: namely the proteins or flesh-formers, and the carbohydrates or heat producers.

Proteins are various nitrogenous substances of the nature of albumen: these substances in one form or other occur in all living bodies: they are essential constituents of animal food, their function being to supply the nitrogenous material of which flesh is built up,

It is not quite certain just how much protein is required by an ordinary man doing a moderate amount of work, but it is usually assumed that about 100 grams, or slightly less than a quarter of a pound is necessary; some observers are of opinion that the daily requirement is somewhat less than this, and there are large classes of people whose daily dietary contains considerably less than 100 grams.

There is more definite information as regards the amount of carbohydrates, or heat producers, and it is found that the extent to which these materials serve as food can be measured by the amount of heat they give off when they are burned, hence it is a common practice to express the food requirements in this respect in terms of units of heat known as Calories. It is known that a man of average weight doing a moderate amount of work requires a daily quantity of carbohydrates capable of giving about 3,000 Calories: this will be effected by about 1.6 lb. of carbohydrate. If the individual is doing hard work, he will require more, and if he is not working he will require less. It is a common experience that work and exercise make people hungry.

The carbohydrates here referred to are such substances as starch and sugar, commonly occurring constituents of vegetables that serve as food. But there is another constitutent which plays a very important part as a heat or energy-producing food, namely fat, or oil. It is found that one pound of fat, or oil, will produce as much heat or energy as two and a half pounds of sugar or starch, hence it will be recognized how valuable as food oils and fats are, and how they require to be taken in much smaller quantities than carbohydrates.

The daily diet of a working man, must, therefore, contain about a quarter of a pound of protein and about 1.6 pounds of carbohydrate, part of which may be substituted by oil or fat, 6.4 ounces of oil or fat being equal to a pound of starch or sugar.

There are many other substances, existing in small quantities, that are used for food, which are necessary for the maintenance of health and vigour; for this reason it is desirable that the substances used as food should be varied in character, and this is desirable also from the fact that a varied diet is more appetising and pleasing, and so more beneficial; for pleasant taste and appearance play an important part in the digestion and assimilation of food.

While it is not very desirable to determine the dietary of a single ordinary individual on the basis of the analytical composition of the food supplied, yet, on the other hand, such information becomes of very great value when considering the food supply of communities as a whole, or of considerable bodies of individuals, such as exist in armies, schools, prisons or other institutions, where it is necessary to provide an adequate and properly balanced food supply. The question is of great interest to us at the moment in considering the range of applicability of such food supplies as are available to West Indian communities, and particularly in relation to such articles of food as are being newly considered.

At the end of this article there is given a table showing the average composition of a number of food materials commonly met with in the West Indies. It will be seen that most of the vegetables are rich in carbohydrates but contain little protein. There are, however, some forms of food that are rich in protein, and it becomes a matter for careful consideration how far we can obtain the two forms of food material in appropriate quantities. We shall do well if we direct our efforts with this end in view.

So far as investigations have been made, it would seem that the diet of the labouring population of the West Indies, when it is obtainable in adequate quantity, is poor in protein but contains a good supply of carbohydrates and fat; this will be appreciated when it is remembered how largely starchy foods and sugar enter into the dietary, and how little meat is used. Reference to the table below will show that the foods commonly raised and consumed in these islands consist largely of carbohydrates, and contain little protein; and this is the case with many of the articles of food which it is commonly recommended should be grown at the present time as an emergency measure.

The position may be illustrated by reference to such substances as sweet potato meal or cassava meal. The analyses of these substances show that cassava meal contains about 80 to 85 per cent. of carbohydrates and 1.5 per cent. of protein, while sweet potato meal contains about 80 per cent. of carbohydrates and about 3.5 per cent. of protein.

From these figures it will be seen that the amount of carbohydrates required for the daily food of a man at moderate work may be furnished by about two pounds of either of these meals, but this quantity will convey about 0.03 pound of protein, in the case of the cassava meal, or about 0.07 pound in the case of the sweet potato

If we look in the table for foods rich in protein wherewith to balance this ration, we find such things of familiar use as salt fish and peas and beans.

Salt fish contains about 20 to 22 per cent. of protein, and practically no fat or carbohydrate. One pound of this would, therefore, supply the whole of the protein required to make up the deficiency of the meals referred to. On this reckoning, two pounds of cassava or sweet potato meal and a pound of salt fish would supply the food requirements of a working man for a day.

Amongst the vegetable foods rich in protein attention may be drawn to peas and beans: dried peas and beans, or the meal from them, contain about the same quantity of protein as salt fish, namely 20 to 22 per cent., so that dried peas or beans or their meals, may be substituted for an equivalent amount of salt fish and still supply the necessary food requirements, at the same time both cheapening and diversifying the diet.

As intimated above, there are found to be instances of people subsisting on smaller quantities of protein than 100 grams, or a quarter of a pound a day, so that there is some doubt as to the minimum supply of protein on which people may subsist.

There are races living largely on rice: this substance contains about 75 to 80 per cent of carbodhyrates and 6 to 8 per cent. of protein. Two pounds of rice will, therefore, provide approximately, the amount of carbohydrate required in a man's daily diet, but will only supply about 0.1 to 0.16 of protein. It will be recognized from this how wise is the practice which provides that a diet of rice shall usually be supplemented by salt fish, or peas or beans.

The position occupied by corn and corn meal may have brief consideration. This substance varies considerably, but we may consider the case of meal of fair average composition containing 8 per cent. of protein and 72 per cent. of carbohydrates and 3 per cent. of oil, or fat. Two pounds of meal of this composition will supply about the equivalent of 1.6 pounds of carbohydrate and 0.16 pound of protein, an amount which is low, but which is far in excess of the quantity supplied by an equivalent quantity of sweet potato or cassava meal. Corn is therefore a nutritious food which only requires to be moderately supplemented by meat or other protein diet; these facts account for the great popularity of corn and corn meal as articles of diet in these islands.

It will be observed that sugar and starch are articles of food containing the maximum amount of carbohydrate but containing no protein: these substances are valuable as affording great supplies of energy, and so are consumed in large quantities by people doing hard work; they do not contain any protein, and are thus only partial foods which must be supplemented by protein-containing foods in the manner indicated when considering sweet potato and cassava meals.

The following table contains representative figures of analyses of foodstuffs commonly consumed in the West Indies. Many of the products in practice exhibit considerable variation in composition according to variety and condition, so that too much reliance must not be placed upon the individual figures given in this table. The figures will serve, however, to indicate in a general way the difference in composition between the various classes of foodstuffs, as referred to in the preceding article. It should also be pointed out that differences also exist as regards digestibility, which have to be taken into account when determining the effective food values of different products.

| | Moisture | Protein | Fat. | Carbohydrates | Fibre. | Ash. |
|---|---|---|---|---|---|---|
| Wheat flour .. | 12.3 | 10.1 | 1.3 | 75.6 | .3 | .6 |
| Indian corn .. | 13.4 | 9.9 | 4.3 | 69.8 | 1.3 | 1.3 |
| Guinea corn .. | 12.5 | 9.3 | 2.0 | 72.3 | 2.2 | 1.7 |
| Rice .. .. | 12.6 | 6.1 | 2.0 | 74.1 | 4.0 | 1.2 |
| Sweet potato .. | 65.6 | 2.1 | .7 | 29.2 | 1.7 | .8 |
| Cassava (root) .. | 70.2 | 1.1 | .4 | 26.7 | 1.1 | .5 |
| Sweet potato meal .. | 12.6 | 3.6 | .6 | 77.6 | 3.5 | 2.1 |
| Cassava meal .. | 11.4 | 2.1 | 1.1 | 82.1 | 1.8 | 1.6 |
| Cassava bread .. | 10.2 | 1.3 | .7 | 81.9 | 4.8 | 1.1 |
| Banana meal .. | 15.5 | 2.5 | 1.0 | 77.7 | .7 | 2.6 |
| Plantain meal .. | 11.8 | 3.7 | 1.0 | 80.7 | .9 | 1.9 |
| Starch .. .. | — | — | — | 99.0 | — | — |
| Sugar (granulated) .. | — | — | — | 99.0 | — | — |
| Peas (Blackeye) .. | 13.2 | 17.5 | 1.6 | 61.7 | 2.2 | 3.8 |
| Beans (Bonavist) .. | 14.3 | 20.1 | 1.2 | 51.1 | 9.5 | 3.8 |
| Salt fish .. .. | 53.6 | 21.4 | .4 | — | — | 24.6 |
| Salt pork (fat) .. | 7.3 | 1.8 | 87.2 | — | — | 3.7 |
| Beef (brisket) .. | 40.6 | 12.5 | 31.9 | — | — | .7 |

Now salted codfish imported from Halifax, Nova Scotia, forms an appreciable proportion of the diet here, and is usually one of the handiest and cheapest nitrogenous foods, eaten in preference to beef. Now, however, salt fish has increased from 4½d. to 7½d. even 8d. per lb., while fresh beef has increased from 4½d. to 6d. in the country and will probably increase from 6d. to 7d. in Kingston. Chemical analyses are useful, but they do not tell what the human digestive organs can get out of foods—one has to get that by his feeling of the digestibility of a food. With the many mixtures often used at a meal however, the wrong food is often blamed. In buying food economically one has also to think what proportion of solids is got for the money. For instance, ordinary salt fish at 7½d. per lb. contains only 10.8 of water, while fresh beef contains 40.6 according to the analyses given by the "Agricultural News"; but the average of 100 analyses made by the Department of Agriculture, U.S.A., gives from 50 to 60 according to the amount of bone. Bone only contains 29.7 of water. It would be fair to take fresh beef and mutton as containing 50% of water (fresh fish contains less); thus 6d. spent on dried salt fish, and fresh beef gives quite a different quantity of solid foodstuff for the 6d. When it comes to digestibility, that is a matter of cooking and the individual stomach.

The cheapest source of protein is found in the legumes—the various peas and beans, and the objection to these from the point of view of digestibility is also a matter of skill in cooking; the husks which are largely indigestible, containing much fibre or refuse, should not be included, but in the cooking the peas and beans should be rubbed through a colander or sieve. Soy Beans—the staple nitrogenous food of the Japanese—are the richest in protein with 35.3% peanuts contain 24.5, and peas thoroughly dried like split peas about 24. Ordinary Black Eye Peas Cow Peas and Red Kidney Beans, if dried for keeping, contain about 17 to 24%, while their water content is usually only 13 to 14%. They are therefore cheap foods to use in combination with rice, potatoes, yams, cassava, etc. potatoes and bread. That standard Jamaica dish rice and peas, forms an economical and staying meal, cooked as it usually is with coconut or pork-fat, or oil.

The salt fish referred to as containing 53.6 of moisture, is not the dried codfish imported here from Halifax, which only contains 10.8 of moisture or water but like our corned fish. We have added the analyses of a few of our common foods as follows:—

| | Water. | Protein. | Fat. | Carbo- hydrates | Fibre. | Ash. | Refuse. |
|---|---|---|---|---|---|---|---|
| Dried Codfish .. | 10.8 | 48.4 | 11.6 | — | — | 29.2 | — |
| Milk (skim or separated) | 90.6 | 3.1 | 0.3 | 5.3 | — | 0.7 | — |
| Milk (whole) .. | 87. | 4. | 3.5 | 4.8 | — | 0.7 | — |
| Eggs .. | 65.5 | 11.9 | 9.3 | — | — | 0.9 | 11.2 |
| Fowl .. | 47.1 | 13.7 | 12.3 | — | — | 0.7 | 25.9 |
| Irish Potatoes .. | 75.7 | 1.9 | 0.2 | 20.7 | 0.7 | 1.0 | — |

We here use almost wholly bread made from fine white flour, but if the proportion of protein and the average digestibility are taken into account, the *fine* wholemeal is by far superior, and medium fine flour is better than the fine white flour commonly preferred, as food.

We give the comparative analysis of the average of 100 samples taken all over the United States to prove this:—

| | Water. | Proteids | Fat. | Carbo-hydrates | Fibre. | Ash. | Refuse. |
|---|---|---|---|---|---|---|---|
| Wholemeal | 14.0 | 14.9 | 1.6 | 66.2 | 1.6 | 1.7 | — |
| Fine Flour | 12.0 | 9.3 | 0.8 | 76.5 | 0.7 | 0.7 | — |
| Medium Flour | 13.0 | 12.1 | 0.9 | 72.2 | 0.9 | 0.9 | — |
| Bread, Wholemeal | 40.0 | 12.2 | 1.2 | 43.5 | 1.8 | 1.3 | — |
| Bread, White | 37.0 | 7.5 | 0.8 | 53.8 | - | 0.9 | — |
| Fresh Fish (dressed) | 58.5 | 11.1 | 0.2 | — | — | 0.8 | 29.9 |

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## FOOD VALUE OF CORN.

We have been writing for many years of the great value that the corn crop is to Jamaica. We have devoted very special effort from the year 1899 right on without relaxation, to the furthering of this crop. We commenced breeding seed corn in 1899 and kept it up until a few years ago when the importance of having selected seed corn to plant began to be realized, and a few interested growers began to make a specialty of supplying seed corn. Owing to the vicissitudes of the weather since 1907, however, the best seed corn has never been too plentiful.

In calculating the value of a crop we must not be guided by chemical analysis alone. If we take the chemical analysis of the crop of corn grain reaped, alone, we would be very much misled as to the value of the crop to the Island. Human beings do not live by bread or breadkind alone. We not only use animals for food, but we require domestic animals for other purposes also. At the present time, for lack of corn the working mules of the country look wretched, and if we had a banana crop of the usual extent to move, it would be difficult to find transport unless at very great expense for feeding, owing to the scarcity of corn. The cat, the dog, the poultry, the donkeys, the mules, the horses, and all the human beings on a holding, flourish when there is a bountiful corn crop. When the corn is still green and growing, the surplus corn stalks are cut out to feed beasts of burden. When the corn is still in the milk stage it is used in the household and the corn tops are cut for the stock. When it is a little further on, it is used in the roasting stage and children going to school make their lunch of it. When the corn is being taken in, the small nubbins are fed plentifully to the pigs and the fowls. No household in the country parts of Jamaica could exist without poultry and eggs, and there would be none of these products without corn. Thus, when the crop is finally measured in grain, it may only be 15 to 20 bushels per acre which is the average in Jamaica, but that does not at all represent the value of the crop. Then the corn crop takes under 6 months to grow and can be planted twice a year; in some districts a succession can be got almost right through the year, but that is not common. From the middle of March to the middle of April, and from the middle of August to the middle of September, form the two

great planting seasons for corn. Then corn can be kept stored as grain, and it can be made into cornmeal for the household daily or weekly as necessary. Our local corn contains all the fat in the germ which is taken out of the corn in the United States before it is made into meal; thus our cornmeal does not keep long, but that does not matter when it can be kept as grain; and of course it is more nutritious than imported meal. The use of corn mills in the household is becoming more common now. We have advocated the use of these mills in the home for a number of years, and tried experiments with various makes of corn mills. Some of our Branch Societies have central mills and we look to this practice becoming more common.

With regard to yield, although 15 to 20 bushels is the average, we have stated that this does not represent the crop. As a matter of fact there have been local competitions among small settlers with an acre as the minimum to be grown, where all the grain was reaped. In one of these competitions in Clarendon on an acre, the first prize was won by a small settler with a yield of 99½ bushels, the lowest competitor had 25 bushels. Then again, through the corn a crop of Red Kidney Beans, Black Eye Peas or Cowpeas, can be grown without detriment to the corn—in fact to advantage—from which 10 to 20 bushels can be reaped. Weather favourable and casualties excepted (storms) there ought to be more corn reaped in Jamaica in August and September than has ever occurred in its history. Even if a big crop comes in, we do not look for corn to be selling dirt cheap; it ought not to, as the price will bear some relation to the cost of other foods, especially imported corn. A big corn crop will be the greatest blessing for Jamaica—a blessing not only to human beings, but all our poor domestic animals kept scant of food at present because of the scarcity of corn.

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## SCHOOL GARDEN COMPETITION.

This Society has for some years offered prizes for special competitions in School Gardens, the competition being arranged according to the products encouraged in particular districts.

These competitions were interesting and served their purpose. It was suggested, however, by some of the Agricultural Instructors, that we could probably do more good by altering the competition, so as to endeavour to get the teachers to keep up regular, systematic work in their School Gardens during the whole year, as there was a tendency for some teachers to slack off work in the School Garden so soon as the School Inspector's examination was over, and then when the next examination was approaching to brush up the garden, plant fresh crops, and have everythigg nice and blooming, no matter whether the crop ever came to fruition or not. But the Instructors looked for more than this; they wanted to see the results also; so a new competition was arranged for, the points being as follows:—

1. General Effect—Fences and gates, beds, paths and borders, labels and pegs, classification of crops 10

2. Permanent Crops—Bananas, Cocoa, Coffee, Citrus Fruit, Sugar Cane (any crop counted as a perennial) .. .. .. .. 15

| | | |
|---|---|---|
| 3. | *Catch Crops—Vegetables (like Cabbages, Turnips, Tomatoes, etc.)<br>Root Crops (like Yams, Cassava, Potatoes, etc.)<br>Grain Crops (like Corn and Peas)<br>(All crops counted as annual or seasonal) .. | 25 |
| 4. | *Special Crops—Such as require special encouragement in any district (this will take the place of the Special Competitions in Corn Growing, etc.) | 20 |
| 5. | Tillage, Manuring (including Mulching) and arrangements for storing same, Drainage, Nursery boxes or beds .. .. .. .. | 20 |
| 6. | Tools, Records of Crops and experiments, and Account of Income and Expenditure .. .. | 10 |
| | | 100 |

The Instructors are not bound to visit every School Garden, no matter where it is, as that might take too much of their time, but they are supposed to visit every School Garden on their usual rounds as Agricultural Instructors. Thus they have been unable to visit some gardens.

The work, unfortunately, was very difficult between the months fo August and December owing to the continuous rains which affected some parishes far more than others.

The marks awarded are not to be taken as a competition between parishes or districts, as each Instructor may have a standard of his own, probably somewhat different from another Instructor. In this Society's Prize Holdings Competition, we had one judge in all districts, so that he had one standard of comparison; but of course, that could not apply to the School Garden Competition as the marks are given at each visit of the Instructors so that the prizes awarded go to those gardens which kept up the best average during the year.

The competition will be continued in 1917-18, and we hope it will be under better weather conditions. We now publish the awards:

AWARDS SCHOOL GARDEN COMPETITION.

| Parish. | Instructor. | School Garden. | No. of Marks. | Amount of Prize. | |
|---|---|---|---|---|---|
| St. Mary | W. Cradwick | Oracabessa | 84 | 7/6 | |
| | | Jackson | 83 | 6/6 | |
| | | Mason Hall | 82 | 5/6 | |
| | | Brainerd | 81 | 4/6 | |
| | | Labyrinth | 80 | 3/6 | |
| | | Killancholly | 79 | 2/6 | £1 10/ |
| St. Ann & Upper Trelawny | E. Arnett | Brown's Town | 80 | 10/- | |
| | | Watt Town | 78 } | 7/6 | |
| | | Bamboo | 78 } | 7/6 | |
| | | Walkerswood | 74 | 5/- | £1 10/ |
| N. Westmoreland & St. James | J. Briscoe | New Roads | 93.4 | 10/- | |
| | | Barney Side | 92 | 10/- | |
| | | Bickersteth | 88.3 | 10/- | £1 10/ |
| E. St. Thomas & E. Portland | L. A. Wates | Winchester | 85 | 10/- | |
| | | Mt. Felix | 81 | 6/- | |
| | | Rural Hill | 75 | 4/- | £1 |

| | | | | | |
|---|---|---|---|---|---|
| St. Catherine | H. L. Mossman | Redwood | 83.3 | 13/- | |
| | | Linstead | 83.2 | 13/- | |
| | | Spring Garden | 77.5 | 9/- | £1 15/ |
| Clarendon | S. A. Schleifer | Alley | 93.3 | £1 | |
| | | Spaldings | 84.6 | 9/- | |
| | | Smithville | 84.3 | 6/- | £1 15/ |
| N. & C. Manchester | Thos. Powell | Bentinck | 81 | 15/- | |
| | | Pike | 78 | 10/- | |
| | | New Green | 73 | 5/- | £1 10/ |
| N. & C. St. Elizabeth | Thos. Powell | Santa Cruz | 67 | 15/- | |
| | | Carrisbrook | 65 | 10/- | £1 5 |
| S. Westmoreland & Hanover | R. C. Somerville | (Westmoreland) Holly Hill | 91 | 10/- | |
| | | Ferris | 83 | 5/- | |
| | | (Hanover) Brownsville | 92 | 10/- | |
| | | Mt. Moriah | 88 | 5/- | £1 10 |
| St. Andrew & W. St. Thomas | A. P. Hanson | Gordon Town | 83 | 15/- | |
| | | Mt. Fletcher | 80 | 10/- | |
| | | Longhill | 80 | 5/- | £1 10 |
| S. Manchester & S. St. Elizabeth | H. W. Lynch | New Broughton | 83 | 10/6 | |
| | | Ballards Valley | 83 | 8/6 | |
| | | Mountainside | 81 | 6/- | £1 5 |
| W. Portland | E. A. Gunter | Birnamwood | 85 | 7/6 | |
| | | Buff Bay | 70 | 5/- | 12/6 |
| Lower Trelawny & E. St. James | M. Rennie | Waldensia | 90 | 10/- | |
| | | Duan Vale | 82 | 6/- | |
| | | Goodwill | 78 | 4/- | £1 |
| | | | | | £17 12/6 |

:o:

## PLANT DISTRIBUTION.

The question of distribution of plants by Agricultural Instructors having been raised the following facts and figures ought to prove illuminating. In certain sections of St. Andrew during the last three years I distributed 6,300 grapefruit seedlings; 1,700 sweet orange; 4,623 cedar; 1,350 cocoa, 4,100 cane tops and 1,000 mahogany.

The percentage of growth is highly satisfactory and these districts have become new centres of distribution for splendid varieties of canes such as B 208 and J 72.

Two years ago I distributed at Dallas and Constitution Hill sweet potato slips; also six varieties of bitter cassava brought up from St. Elizabeth by the Parent Society for these dry districts. These people with their fields of cassava, sweet potato, etc., have actually chuckled over prices prevailing since the war, and the recent storms.

A few days ago Mr. Clare of the Cambridge-Woodford Branch applied to me for advice how to get cassava sticks, I was able to refer him to the members of the Dallas and Constitution Hill Branch, and was present at Gordon Town on the 16th inst., when Rev. S. T. A. Jones, president of the former Branch, applied to Mr. J. L. Vickridge, President of the latter, on behalf of members.

Mr. Vickridge readily promised to let the Cambridge-Woodford Branch have all the sticks they wanted

Last Spring, I secured for members of Branch Societies in certain of the districts mentioned above over a ton of yellow yam heads from Glengoffe. Most of these met members from the hills with their donkeys at Half-way Tree.

The first crop has been reaped, very satisfactorily reported on, and the increased returns are being planted out.

I am again arranging for supplies for members of Branches extending from Stony Hill to Bloxburgh, and the border of St. Thomas-Ye-East.

Secretaries of Branch Societies are busy getting orders for supplies of Renta Yam heads.

The universal distribution of the bountiful and popular St. Vincent variety is to be accounted for, in the same way while the improved varieties of Indian corn proclaim the activity of the Agricultural Instructors in this phase of our work.

Scattered over many acres of the slopes above Somerset in St. Thomas-Ye-East where the conditions are very similar to those obtaining in the Glengoffe District of St. Catherine are many hundreds of the Jippi Jappa plant sent there from the latter district and Above Rocks, through my instrumentality, and growing beautifully in their wild surroundings.

An English gentleman owning property in this neighbourhood, and deeply interested in the industrial life of the people is maturing with me a plan by means of which to develop the Jippi Jappa Hat Industry in that section as soon as the plants are sufficiently developed to insure a regular supply of the straw.

Since the milk famine, I have been able to secure for different persons as many as twelve milch goats.

Though grave fears were entertained regarding the fate of the Red Kidney Beans, etc., distributed towards the close of last year, the effort has borne splendid fruits in many places. To cite examples, from Craighton alone, one man has just reaped 40lbs. of Irish potatoes from 4lbs. given to him; from this he has realised 9/-, and some kept back for planting.

Another man boasts of having all the needs for planting of Red Peas reaped from his relief seeds.

I saw the reaping of still another member's and the quality is superior to that planted.

All this came under my observation in one day-the 21st inst.

Stony Hill, P.O. A. P. HANSON.

:o:

## REPORT ON SOME RESULTS OF SEED DISTRIBUTION IN WESTMORELAND AND HANOVER.

I send you a report on the results of the seed distribution in these parishes and specially of the seed potatoes distributed in Upper Westmoreland.

The potato competition which is now being concluded is of the greatest interest in this district. I distributed 800 lbs. of seed potatoes to 80 people. A prize of 10/- was offered by J. C. Whyte, Esq.,, Collector of Taxes and a second prize by Mr. T. O. Senior, the teacher of the Caledonia school, both of whom are active members of the Darliston Branch. The potatoes were planted under my supervision, and I am now taking up and weighing the crops. The results from the

10lbs. given to each man have been remarkably gratifying. The largest yield up to now has been 112 lbs. and the smallest 73 lbs. All the men did not plant at the same time so there are still some to be taken up. Some of these are still hoping to beat Mr. Samuel Philip's 112 lbs. Eleven lbs. to one is considered a fair average crop, judging from results obtained elsewhere, and when it is remembered that many of these men never grew the crop before, I think the result excellent. The ultimate result of this competition will be of great benefit to the district, as many men will now become permanent growers of the crop.

This year the price of native potatoes is 3d. per lb., so that the profits are large.

In some places the vegetable seeds given have been profitably utilised. one man making 25/- out of his small plot of cabbage, turnips, tomatoes and pumpkins. Not only has the inevitable spell of hard times been reduced in its intensity, but what is more important to the country, many peasants have discovered that they possess the lands suitable and the knowledge necessary to keep up the growing of the useful kitchen garden.

There is now a large demand for seed corn which I am delighted to say is being met by the corn planters to whom one quart of seed corn from your office was given after the hurricane. I regret that I cannot report the same results from the cow peas as that crop has been a failure. The seeds got from the crop, however, are expected to give better results this spring.

The large American kidney beans did not do well either, but a second crop reaped since then from the few seeds saved is very good. The crop is one at any rate that has been introduced and will go on increasing till it becomes common.

I have written this report at the request of J. W. Mennell, Esq., J.P., the President of the Savanna-la-Mar and Darliston Branches, who desires the results of this seed distribution to be published in the JOURNAL for comparison with other places and for the benefit of the competitors as well as for those who are averse to the seed distribution.

(Sgd.) R. C. SOMERVILLE.

Darliston,
28th March, 1917.

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## USEFUL EXPERIMENTS FOR SCHOOL GARDENS.

*Experiment 1.* Lay out 6 beds each 3 or 4 ft. wide and say 12 ft. long with 2ft. paths between. These should be all side by side. Number off the beds, 1, 2, 3, etc. Clean all. Do not fork No. 1, fork No. 2, fork and add stable manure to No. 3, fork and add woodashes to No. 4, fork and add stable manure and ashes to No. 5, fork and add lime to No. 6. If there is space the teacher can use his ingenuity and arrange many more beds similarly. Next plant a row of cabbages across all the beds, also a row of cow peas, turnips, tomatoes, etc., as the space may admit. After this the beds must all be given exactly the same cultivation. Weigb all the results carefully and let both teacher and scholars note these results. Useful and instructive pages will thereby be added to the note books for practical use in

*Experiment 2.* Arrange 4 small beds side by side. Make them 3 ft. wide with a 1 ft. path between and 12 ft. in length. The length of the beds must be a multiple of 1, 2, 3, 4, to make the experiment good. Drop a line down the middle of each bed. Plant No. 1 with corn 1 grain to a hole 1 ft. apart, No. 2 with 2 grains to a hole 2 ft. apart; No. 3 with 3 grains to a hole 3 ft. apart, and No. 4 with 4 grains to a hole 4 ft. apart. Each bed should then have the same number of grains. The grains should be all good and taken from the same cob. Care all alike. Harvest and weigh carefully the results. Record in the note books.

Further experiments will be suggested in future issues.

S. A. SCHLEIFER.

:o:

## THE DEVELOPMENT OF THE RICE INDUSTRY IN JAMAICA.

We import £60,000 worth of rice every year. All this could be easily raised in Jamaica. The rice growing industry has been carried on well in Westmoreland for some years, and lately has been extended. There are still large tracts of morass in that parish which could be taken up, but rice growing need not be confined to Westmoreland. It can be carried on almost right round the coast lands of the Island where there are suitable areas at present under morass. In this way these eyesores could be made to produce one of the most valued foods for human beings and animals. We say animals, because the rice bran is a valuable bye-product which would save such large importations of wheat bran.

In Trelawny the rice industry was started about 1899 (as we referred to in a comment published in the JOURNAL for February, 1917) page 67), but was not carried on long. The rice grown however, was all right. A few trial cultivations have been started in St. Thomas Ye East this year.

The development of the rice industry should certainly claim our most serious attention now.

We however, very much regret that we have been unable to secure seed enough to supply the demand this year, but we expect to lay in a store from the crop which should be reaped in December to meet the planting season in May 1918.

The following from one instructor speaks for itself :—

The planting of food stuffs in the West Indies is being very seriously taken up in most of the Islands. From an Article in the *Agricultural News* of March 24th, I see that the opportunity afforded by the problem of home grown foods is being taken advantage of, to extend the rice industry in Trinidad. The same could be done in this Island. The recommendations of the committee appointed by the Board of Agriculture of that colony might well be adopted here:

1. The recommendations include a system of prize competitions on similar lines of competitions held in some parts of this Island by the Agricultural Society. This could be easily managed if the necessary funds were available.

2. The utilization of crown lands is also among the recommendations . We have thousands of acres of crown lands that bring little or no revenue, that are suitable for rice growing. It would be a splendid investment if these were utilized to produce rice.

3. The dissemination of details as to the best methods of planting and cultivation. This is the work of the Instructors who are only too ready at all times to do their part.

4. The erection of co-operative mills. This to my mind is not only a workable proposition, but a splendid opportunity to put the precepts of co-operation so long preached in the country into practice. Co-operative societies are coming to have their day. There seems to be a desire on all sides for them. Recent experiments have proved signal successes when worked on right lines. Such encouragement as would be given to the industry if these recommendations were adopted in this country, would necessitate steps being taken to acquaint rice growers with the working of such enterprises; as the possibility of a rapid development of the industry would render such knowledge desirable.

The necessity for the production of home grown foods will remain with us for a long time after the war, and the people of the country will learn that it is not only *safer*, but *cheaper*, to produce the bulk of the food consumed at home, whatever be the conditions obtaining.

The incentive given this year by the high prices, has nearly doubled the area put in last year, and the season for planting is still in its height (April). One can see from this that if efforts were put forth by the responsible parties for the Island's development, the increase in the output of rice, would be so great, that the amount of rice imported into the island would be inconsiderable.

R. C. SOMERVILLE.

:o:

## BREADFRUIT AS A FOOD SUPPLY.

The crop of breadfruits now on the trees in these western parishes is one of the largest I have ever seen. The pruning given by the last hurricane and the splendid seasons that have kept up has done in a few months what the wisest man would have estimated to take years last August. So does one force of nature replace what another force destroys.

A great many people know that breadfruits properly treated can be stored, but do not take the trouble. What a pity it is that the answer "can't bother" is still so common in this Island. Now I can assure people here that this year especially, it pays to "bother", and those who "can't bother" will suffer. The production and conservation of food is the most important question to-day. I give a few hints about the breadfruit which if followed will give useful and profitable employment to women and children in the household.

Fit breadfruits which are not wanted for sale or for eating in the ordinary way (and in some districts there will be plenty) should be peeled and sliced about half an inch thick and spread out in the sun. They should be turned regularly so as to have them uniformly dry. These should be put up in barrels and when wanted should be put back in the sun for an hour and beaten in a mortar to a flour. This makes excellent porridge and with the addition of a little wheat flour can be made into a dumpling.

If breadfruits are roasted and stowed away in a barrel they will keep for months and can be boiled as a pig feed.

R. C. SOMERVILLE.

## FLORIDA CITRUS SPRAY.

In October last I painted and scrubbed the larger stems of some grapefruit trees in the School Garden at Oracabessa with the sulphate of iron mixture, and sprayed the trees also with the Florida Citrus spray (a proprietary article supplied by the Government Entomologist). Previous to this treatment the trees were plastered with Scale Insects. On my visit to the Garden in December, I found that the trees were as far as I could see free of scale insects but were covered with a lovely crop of the little beneficial red headed fungus (Sphoerostilbe), the trees themselves looked completely changed the young growth being of the darkest and healthiest green colour, in fact the change wrought by this simple treatment must be seen to be believed.

I have repeated this treatment on other trees with the same good results as regards the improved appearance of the Citrus trees and the growth of the red-headed fungus.

I should be glad to hear experiences of other users of the spray and if they used it in conjunction with the sulphate of iron wash which certainly is a splendid thing for keeping the stems of all trees free of all kinds of pests.

Perhaps the Entomologist will explain the sudden appearance of Sphoerostible. Is it due to the large crop of corpses of scale insects available as a host?

W. CRADWICK.

:o:

## FENCING.

Not quite enough attention is given to the proper fencing of the holding. In some cases very little, or no attempt at all, is made, to make a fence of any sort. In some places stones are the commonest things, yet not even stone walls are put up. The stones scattered about the premises should be gathered, and a substantial wall built. With the stones cleared up, it would be very much easier to dig the yam hill or cocoe hole.

I would suggest that our small settlers have a "fencing day" monthly or weekly. On this day attention should be given to erecting or repairing the fence or wall. It is a great mistake to allow the fence or wall to get into an awful state of disrepair instead of giving close and careful attention to it. Remember 'a stitch in time saves nine.' In cases where the wire or bamboo fence is the most convenient, "fencing day" may be spent in planting growing stakes, trimming growing hedge or line fence, and supplying posts, etc., etc. And in this there is room for co-operating. Just as the custom of 'giving day' to clean bush, plant corn, dig yam yills, etc., is found very helpful, the same may be employed for the fencing or wall building.

A good fence, in my opinion, would give the praedial thief less scope; would give better convenience for the keeping of the stock; would improve the appearance of the holding; would increase the value of the holding; would very much reduce the loss and damage which too often result from the trespassing pig, cow, horse, mule and donkey; would save much quarelling, fights and law suits over the land mark, and all the rest of it, too well known to be named here. Even at the rate of one day per month if this was followed since you got in possession of the land how far would you not have got by this time.

E. A. GUNTER.

## PRESERVE YOUR SURPLUS BREADFRUITS AND HELP WIN THE WAR.

The old proverb, "wilful waste means woeful want," has a deeper significance to-day than ever. Every man and woman who saves an ounce of foodstuff in these days of economic pressure caused by the great war, is as surely rendering a patriotic service to the Empire as is the man who dons khaki and goes forth to kill the enemy.

There are many food crops in this prolific country which mature in such abundance within a short time that they cannot be used up, and unless the surplus can be preserved for future use, much good food is wasted.

The ever bountiful breadfruit tree is now giving promise of an abundant crop of satisfying fruit, and the following formula for preserving the surplus crop, which I am advising all my branches to use, may also be of use to the readers of this JOURNAL.

Carefully select sound, just full breadfruits. Peel carefully and remove the core with a circular movement of a sharp, clean knife; cut in pegs about 1½ inches in thickness, and dry thoroughly in the sun (on a barbecue if available, but never on zinc), or in a slow oven. When thoroughly dry, pack in a clean dry barrel or box and seal tightly, these will keep for 5 or 6 months.

When required for use the pegs can be grated, boiled with either milk or water and eaten as porridge or pap; or they can be soaked over night in slightly salted water and boiled next day in the usual way and served as a vegetable.

If every owner of breadfruit trees in the island will make it their patriotic duty to see that not even one fruit is wasted, they will have the satisfaction of knowing that in conserving their food products they have not only enriched themselves but have also accomplished something towards that final victory over the enemy which we all so ardently desire.

J. BRISCOE.

:o:

## PRAEDIAL LARCENY.

In the proceedings of the Agricultural Society of Trinidad and Tobago for August, 1913, it was reported that the General Cultivation Committee of that Society were of the opinion that the crime of Praedial Larceny will never receive any appreciable check in the colony unless the penalties for the crime include the infliction of corporal punishment.

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## WAR GIFTS FROM JAMAICA.

FORTY-FIFTH SHIPMENT.

The following War Gifts have been contributed and shipped to the United Kingdom per the Jamaica Agricultural Society, during the fortnight ending 9th April, 1917:—

| Donor & Address. | Gift. | Destination. |
|---|---|---|
| Ladies' Working Association, Half-way-Tree | 400 Garments, pillows, etc. | British Red Cross Stores Department, 83 Pall Mall, London |

| | | |
|---|---|---|
| Ladies' Working Association, Half-way Tree | 1043 Hospital Bags | Lady Smith-Dorrien, 5 Belgrave Place, London. |
| do | 220 Garments, etc. | Committee for the clothing of Belgian destitute children, 13 City Road, London, E.C. |
| Mrs. Briscoe, Montpelier | 3485 pairs Old Gloves | Miss Cox, Glove-Waistcoat Secretary, London |
| H. T. Ronaldson, Newport | 7 boxes Grapefruit | Lady Clementina Waring Convalescent Home, Lennel, Coldstream, Scotland. |
| do | do | Lord Knutsford's Home for Officers, Kensington |

We have also received the following gifts and disposed of them as follows:—

Put on board the Contingent Troopship:—

| | | |
|---|---|---|
| Grapefruit:— | A. C. Westmoreland, Annotto Bay, | 6 barrels |
| | Hon. Geo. McGrath, Ewarton, | 6 boxes. |

To Bumper Hall Hospital for sick Contingent men:—

| | | |
|---|---|---|
| | H. T. Ronaldson, Newport | 1,400 Grapefruit |
| | | 5 boxes Grapefruit |
| | Mrs. W. W. Wynne, Mandeville | 14 boxes Grapefruit |
| | Thos. Powell, Mile Gully | 1 barrel Grapefruit |
| | Mrs. A. C. Westmoreland, Annotto Bay | 2 tins (20lbs.) Guava Jelly |
| Magazines— | C. A. Miller, Bybrook | 1 box |
| | Hon. D. Campbell, Linstead, | 1 package |
| | V. J. Nicholas, Morant Bay, | do |
| | T. M. Gray, Richmond, | do |
| | E. J. Smith, Richmond | do |
| | H. Cocking, Kingston | do |
| | J. Barclay, Kingston | do |
| | Temple of Fashion, Kingston, | do |
| Sugar— | W. E. Rerrie, Hopewell, | 5 tins. |

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## GROUND PROVISIONS, SPECIAL RAILWAY RATES.

The rates for conveyance of Ground Provisions by rail to Kingston vary from 1/ to 6d. per cwt. according to the distance.

Application for rates should be made to the Station Masters.

Passengers are allowed 56lbs. of Ground Provisions FREE in place of baggage, and if they also ship not less than 3 cwts. by the train on which they travel will be granted a Return 2nd. Class Ticket to Kingston at FARE AND A HALF, good for three days, (That is, for the day of issue, and two more days, Sundays not counted.)

FROM MONTEGO BAY TO KINGSTON.

Shipments of quantities of 1 cwt. but under 20 cwts. 1/ per cwt.

Shipments of quantities of 1 ton and over 11d. per cwt.

Shipments of carloads of 8 tons and over 8½d., per cwt.

For rates from Stations nearer to Kingston apply to the Station Masters.

Passengers are allowed 56lbs. of Ground Provisions FREE in place of baggage. and if they also ship not less than 3 cwts. by the train on which they travel will be granted a Return 2nd Class Ticket to Kingston at FARE AND A HALF. good for three days. (That is, for the day of issue, and two more days. Sundays not counted).

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The following are the charges for trainage to Kingston:—

| FROM | Shipments of Quantities of 1cwt. but under 20cwts. | Shipments of Quantities of 1 ton and over | Shipments of Carloads of 8 tons and over |
|---|---|---|---|
| Port Antonio .. | 10½d. per cwt. | 9d. per cwt. | 7½d. per cwt. |
| St. Margaret's Bay .. | 10d. ,, ,, | 8½d. ,, ,, | 7d. ,, ,, |
| Hope Bay . | 10d. ,, ,, | 8d. ,, ,, | 7d. ,, ,, |
| Orange Bay .. | 10d. ,, ,, | 8d. ,, ,, | 6½d. ,, ,, |
| Buff Bay . | 10d. ,, ,, | 8d. ,, ,, | 6½d. ,, ,, |
| Annotto Bay . | 9d. ,, ,, | 7½d. ,, ,, | 6d. ,, ,, |

For rates from Stations nearer to Kingston apply to the Station Masters.

Passengers are allowed 56lbs. of Ground Provisions FREE in place of baggage, and if they also ship not less than 3 cwts. by the train on which they travel will be granted a Return 2nd Class Ticket to Kingston at FARE AND A HALF, good for three days. (That is, for the day of issue, and two more days, Sundays not counted).

C A. SQUIRE,
Traffic Superintendent.

## COMMENTS.

FOOT AND MOUTH DISEASE.—As the United States have now been officially declared free from Foot and Mouth Disease, the Government here has withdrawn the prohibition of the 1st December, 1914, against importing into Jamaica any animals, fodder and litter, from that country.

Those who have been anxious to import cows and pigs can now do so.

:o:

SCHOOL CHILDREN'S COMPETITION—GROWING "RED PEAS."—We gave notice that this competition would close on the 31st March, and we actually judged numerous samples sent in and awarded prizes as follows:—

| | School. | Teacher. | Winner. |
|---|---|---|---|
| (1st) | Smithville | J. A. Edwards | William Clarke |
| (2nd) | Ashton | C. H. Blake | Victor Cunningham |
| (3rd) | Richmond Park | G. Nelson Clark | Delorie Simpson |
| (4th) | Brown's Town | G. T. Brown | Leceta Nevers |

But we have heard from so many teachers in districts where seeds sent out had to be held over to the early Spring in order to get seasons to plant, and who are now sending in their samples, that we have decided to divide the competition into two: (1) for early planting as per results above, and (2) for the late planting. We shall, therefore, keep open the competition to the end of this month to enable all those who have planted late to send in their samples. There will be, in consequence, two sets of prizes.

:o:

EGGS.—A novelty both as an export and as a War Gift is eggs. We shipped by the Elders and Fyfes steamer a parcel of eighty eggs put up by Mr. Anderson, the Island Treasurer, addressed to a Military Hospital in England. As an experiment, Mr. Anderson posted a previous small lot which arrived quite safely. These eggs were preserved in water glass solution, a system already explained in this JOURNAL. Eggs make a useful gift and we should be glad to arrange for a larger consignment of fresh eggs.

:o:

PRESERVING EGGS.—Eggs are plentiful and cheap now, but will be scarcer and dearer than ever from October to January, as owing to the scarcity of corn most people have reduced their stock of fowls and are not raising as many chickens as usual. Now is therefore the time to preserve eggs for use towards the end of the year. The water glass method is the best, but the lime water method is quite effective. Use earthenware crocks or clean wooden barrels. We have often given the recipe.

:o:

FACTS ABOUT SITTING EGGS.—With further reference to "Facts About Pumpkins," in some districts it is also believed that if a setting of eggs is place below the hen by a female, a greater number of pullets will be produced and *vice versa*. (Of course there is nothing in this the

FEEDING FOWLS.—We have been feeding fowls without corn ( other grain for 3 months now, and have used little imported foodstuff The fowls have done well. We know of course that they would giv better results in eggs with grain, but at the present price of corn w fear grain would not give better nett results. The chickens are grow ing nicely. The food used is principally rice bran, coconut mea sometimes with spoiled shop flour added when we can get it, an sometimes with boiled yam, cocoe and potato peelings, but not muc of these are available. This is far from an ideal ration, but will pu us through to August when corn will be plentiful and we expect reasor able enough in price to make poultry pay.

———:o:———

HOME-MADE BREAD.—Home made bread of 1 part cornmeal t 3 parts wheat flour reduces the price of the loaf and makes good brea such as the most fastidious should not quarrel with. About Augus when bananas, sweet potatoes and corn will again be plentiful, th meal of either of these can be used to make bread—3 parts of flou to 1 of the home made meal.

———:o:———

RABBITS.—Remember that rabbits are the quickest and cheape meat stuff to produce. At this time every home should have a pe of rabbits.

———:o:———

The Government have again appointed a Food Commission t regulate the prices of foodstuffs. At present the Commission onl deals with imported foodstuffs. Rice, flour and cornmeal must b sold by weight alone and not by measure.

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POTATOES.—(Extract from Report of Mr. Rennie (Agricultura Instructor for Lower Trelawny) for March, 1917. "I have seen ver good results from the seeds distributed by the Parent Society. A an example, Mr. N. A. Livingstone, the school master at Waldensi got 84lbs. of Irish potatoes from a plot 19 x 18 in the school grrden This plot was planted out at a demonstration for the benefit of Branc members who were given what was being sent by the Parent Societ At the above rate the yield would be 11,293 1-3 lbs. per acre, an would bring at the local wholesale buying rate of 2½d. per lb., £11 12s. 9d.

We are to have an exhibition of the best potatoes grown from thos distributed at our next meeting. The good results obtained fron the above plot ought to be an encouragement for the members t plant these potatoes more generally."

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"IRISH" POTATOES.—We have received a great many enquirie from people who have never given this crop a thought before, asking— in the month of May—whether they can get seed potatoes to plant and most of these enquiries have come from the lowlands. First there are no seed potatoes available after April, and even in the hill planters do not care to plant after that. We have written very ofte of the climate and soil requirements for this crop. Unlike swee potatoes, the potato usually called "Irish" here, requires the mos favourable circumstances of a cool climate, land either naturally ric or made extremely rich with manure and the soil made fine and kep fine with high cultivation. As the crop matures in 10 weeks, it i

natural that every circumstance governing its growth should be favourable. It is only a lowland crop in the cool weather—planting October to March—and in the hills while potatoes can be planted almost all the year round depending upon elevation, the commercial crop is the spring crop planting January to April but preferably March. The yield is usually very much under what is reaped in northern countries where high manuring with not less than 10 tons of animal manure and 6 cwt. artificial per acre is done, and 5 tons is a very medium crop; whereas that is a very good crop here.

Anyone wanting to plant next season should order seed in August. for delivery from October to March.

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OVERLOOK BEAN.—A visitor from Fiji to this office states that this bean which has been regarded in Jamaica with suspicion as not edible for human beings and even animals, is considered a good food and is commonly eaten.

Really, local feeding experiments ought to have been carried through long ago, as this bean is hardy and prolific here, and tons of it have been wasted while mules went without grain from the scarcity of corn.

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SEASONS AND FOOD.—The Instructor for St. Mary remarks that generally speaking the weather during April was very favourable throughout his parish; that there is a distinct improvement in the appearance of all crops, but compared with the spring of last year, recovery of bananas from the effects of the hurricane is painfully slow; there is, however, a continued increase in the amount of bananas being cut which is easing the general food situation, but there is still a lot of land planted out with rubbishy bananas which would be better planted in peas and sweet potatoes. In some cases some of the old bananas are now being cleaned up without anything being planted through them. "What the owners expect to get for their labour passes my comprehension. Peas and corn planted through such fields would prove much more remunerative, as has been pointed out ever since the hurricane," he adds.

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LAND FOR CULTIVATION.—The Governor has under "The Defence of the Island Law 1915," issued an additional regulation regarding land for cultivation, to come into effect. We are sorry we cannot publish this in the May JOURNAL which is already in print. Shortly, however, the Governor takes power to take over land that is not being cultivated without the consent of the owner and arrange for its cultivation. This does not of course mean the whole of the land belonging to the owner, but if there is no cultivation of any land at all, either by the owner or by tenants, the new regulation can oblige some cultivation to be done. There are two main regulations—one excludes land in use for grazing or pasturage, where crops of beef and milk are raised, and the other regulation includes land in common or other pasture if necessary. This new Order is issued with a view to maintaining the food supply of the Island.

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SEASONS AND CROPS.—Taking the Island as a whole, we have had excellent spring seasons, although in the driest parts these were rather late in coming. It is a common fault to wait until the rains are actually falling before lands are prepared for planting, instead

of this being done so that everything is in readiness for planting whenever rain falls. Where the weather allows of planting, however, this has been going steadily on at a rate, from at least double to ten times as much as in ordinary years, as reported by the Instructors. Districts differ as in some parts lands are plentiful and can be easily rented, while in other districts there is some congestion. A good many large proprietors have given out lands practically free. More land would have been planted out had enough seeds and plants been available, but naturally after storms and rains and with so much more planting going on, there is not an abundance available. The quickest and surest crop, and one that has been largely planted, is the sweet potato, but another pretty sure grower and a hardy product, and one that has become a very favourite food during the last few years, is the cowpea. The most generally useful crop, however, is corn. Fortunately, cowpeas were planted through the bananas as soon as the heavy rains at the end of the year let up and fairly large quantities were only available just when the usual planting season was over; they were scarce when most wanted. We will be hard pinched for food until July, but each week now as we go on will see more food available. Bananas will be moderately plentiful in July although small bunches in most places; sweet potatoes will be in plentifully then and peas will also be plentiful; in August yams will come in more plentifully and there will be very abundant crops of corn. May is not a good month to plant any grains but a good time to plant root crops; still, some are risking planting corn on the chance of some crop, and cowpeas are so adaptable that these can also be planted. June planted corn, peas and beans do fairly well if we get rain in July, and the crops mature when the corn reaped in August is just going out, and so it is very useful.

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FOOD SUPPLIES.—In the Jamaica Gazette for May 2nd., there is a memorandum on "Food Crops" by the Director of Agriculture here in which he deals with this now all-important subject. This has been reprinted in full in the Newspapers. The article on "Food Requirements" in this JOURNAL taken from the Agricultural News of the 14th of February however, was already in print and was ready for publication in April. It also deals fully with the subject. We may quote from the Director s memo next month.

While there is occasion for every one to be interested on the subject of our food production, and to be anxious about supplies, there is no need to be over-anxious or to be scared. Speaking or writing hysterically will not help. We want to keep our heads and pull all together. We must be practical and prompt. The knowledge given in the article printed in this JOURNAL, and the memorandum by the Director of Agriculture, should be well studied, so that besides raising plenty of food, we should also be able to use our foods judiciously, without loss and without-waste.

## BRANCH NOTES.

DARLISTON (Westmoreland.)—The tenth annual meeting of this Branch was held in the St. John's Schoolroom, on the 9th March, 1917. Present: Messrs. J. W. Mennel, President; R. C. Somerville, Agricultural Instructor; Rev. J. Carnegie, Vice-President; J. H. Hedley, retiring Secretary, and other members. The minutes were read and confirmed. A resolution *re* Praedial Larceny was passed. It ran thus: "That the time has come when the Government must be called upon to enact drastic measures to endeavour to put down praedial larceny in the Island. The increasing loss to planters occasioned by the activity of praedial thieves is the greatest hindrance to the efforts of planter to increase the food production of the Island. Praedial thieves are the most dangerous animals in the island to-day and are the cause of the greater part of the hardships and poverty in the island at the present time." "That a copy of this be sent to the Colonial Secretary through the General Secretary, Mr. Barclay, and one be sent to the members of the Legislative Council." The matter was to be referred to a committee consisting of Messrs. C. J. Stewart, R. J. Blake, H. McKenzie and J. W. Mennell and meeting on th.. 30th March. The Annual report was read hy the retiring Secretary and adopted by the meeting. The following officers were elected for the current year: J. W. Mennell, Esq., President; Messrs. C. J. Stewart, H. McKenzie and Rev. J. Carnegie, Vice-Presidents; R. J. Blake, Secretary, and R. W. Smith. Treasurer. The President then left the meeting and in his absence the Rev. Mr. Carnegie occupied the chair. Mr. Somerville informed the meeting that owing to a suggestion he had had from Mr. Barclay, the General Secretary, he had reconsidered the proposal to buy a small corn mill, and would hold the matter in abeyance until the Branch was able to buy one for about £5. Mr. H. McKenzie then addressed the meeting on the subject: "Can Agriculture pay the Small Settler in Jamaica?" Mr. Somerville referred to the increasing use of eddoes as an article of food. He strongly recommended it to settlers as an article of food very nutritious and easily cultivated. He also pointed out that they thrived in drier localities, provided they were manured, and were then better than those from wet swampy places. The Rev. Carnegie then explained how he multiplied yellow yam heads. He said that one vine can be made to give several heads simply by cutting them as soon as they are mature, and burying the vines back in the hills as was done when the yam was first cut. The demonstration of the manufacture of cassava cakes was postponed. The meeting was then informed that Mrs. Williams' prize for the Enfield District for the best kept holding would be judged the next week. The Instructor also stated that he would travel round to witness the taking up and weighing of the Irish potatoes last given out by the Branch. Mr. Gordon was informed, in answer to his question, that Egyptian Cotton was of inferior value to Sea Island Cotton. The meeting then adjourned.

R. J. BLAKE, Secretary.

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SCOTT'S HALL (St. Mary.)—This Branch met in the schoolroom on Wednesday, 28th March. Among those present were: W. Cradwick, Esq., Agricultural Instructor, Messrs. E. E. Campbell, Vice-President, in the Chair, the Secretary and several members. After the minutes were read and confirmed, a resolution was carried unanimously *re* requesting the Parochial Board to raise the No. 11 Road leading from Rock River to Scott's Hall from a second class to a first class road. Correspondent was read and dealt with. The Secretary said that the Authorized Persons were not doing as well as he expected of them, as no arrests had been made since last meeting. The Instructor spoke on the importance of the Half Yearly Meetings. He was sorry the delegate from this Branch was prevented by rain from attending the last time. Some important matters were discussed, one of which was a resolution to revise the Registration of Titles Law and make it convenient for the small man to get a registered title at a small cost. The Secretary read the General Secretary's replies as to what was done with the resolutions sent up at last Half Yearly Meeting as regards Central Factories, and Licenses on Firearms. The replies did not meet the approval of the members and they were left over for next meeting when they will be discussed fully. The Cocoa Competition was next dealt with. Other minor matters were dealt with. The annual meeting was fixed for then 26th proximo when the Instructor promised to be present. The meeting was brought to a close by the singing of the National Anthem. G. O. HANSON, Secretary.

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CENTRAL (St. Mary.)—The eleventh annual meeting of this Branch came off in the Clonmel Schoolroom on Thursday, the 5th April. Mr. J. I. Watson, First Vice-President, presided. There was a good attendance of members and visitors. The minutes of the tenth annual meeting were read and also reports of the last regular meeting held on the 1st March. Correspondence, chiefly on the food

chiefly the cutlass which is now being sold at from 3/- to 5/-, and can hardly be got even at that. Praedial larceny and food planting are to be considered at the next meeting. H. W. HAY, Secretary.

COOPER'S HILL (Portland.)—The regular monthly meeting was held in the Cooper's Hill Schoolroom on March 29, 1917. There were present, Joshua Micklejohn, Esq., V.P., in the Chair, 15 other members and the Secretary. The minutes of the last meeting were read and confirmed. A resolution *re* gambling from the Spalding Branch was read and unanimously supported. It was agreed to purchase a corn mill for this Society. The subject for discussion at the next meeting will be: "Which has had the greater effect upon Jamaica—the present war or the hurricane of 1916?" At our next regular meeting, Mr. Joshua Micklejohn will also read extract from the Journal. Several members gave their views on the topic of the day—the food problem, and resolved to put in a double crop. The meeting then adjourned until April 26, 1917. S. LEO MCDONALD, Secretary.

NONSUCH (Portland.)—A meeting of this Branch was held on 30th March. There were 32 members, some visitors and Mr. L. A. Wates, Agricultural Instructor, present. The Instructor addressed the meeting on various topics such as the planting of foodstuffs and the stock rearing. The rules relating to the duties of the Society were carefully explained. The getting of seeds and a grind stone was brought forward, seeing that there is need of them at present. Three new members were elected. The next meeting was fixed for the 27th prox. A. E. WRIGHT, Secretary.

BELVEDERE (Portland.)—At the annual meeting of this Branch there were present 6 members, the Instructor and Secretary. Assistant Secretary Johnson was nominated to take the chair in the absence of President. Minutes of last meeting read and adopted. Correspondence read showing that the Entomologist is expected in this district ere long to get facts in connection with the woodpecker. The Instructor requested members to give Entomologist all help when he came. The Secretary presented his annual report, and matters arising out of it dealt with. He attended 6 out of the 8 meetings for which he was praised. He was also heartily thanked for his help in lectures and demonsrations. The Society is highly benefited by them., President thanked Instructor for regular visits and also Secretary for good reports. It was agreed to purchase a corn mill as soon as possible. All old officers were re-elected, and Mr. J. Vassall was elected 2nd Vice-President. One Authorized Person presented his report, and the subject of the duties of the others was discussed. The National Anthem ended the meeting. R. J. LAWSON RICKETTS, Secretary

REACH (Portland.)—The first annual meeting of this Branch was held on 3rd April, 1917: Present: C. A. Currie, President, in the Chair; L. A. Wates, Instructor for the parish, 18 other members, including the Secretary, and three visitors. The minutes of the last meeting were read and confirmed. The election of officers for the ensuing year took place, which resulted in the re-appointment of those of the previous year. A letter was read from the Secretary of the Spalding Branch. Four members paid their fees. Authorized Persons presented their reports. The Instructor gave an interesting address on Co-operation; he suggested that the members form themselves in Co-operative Bodies of workers to do work in their fields. The meeting adjourned. ERNEST LORRAINE, Secretary.

MAIDSTONE (Manchester.)—Friday, 20th inst., was the day fixed for the annual meeting of the Maidstone Branch of the Agricultural Society. Owing to rain just a quorum and the Instructor were present. The minutes of previous meeting were read and confirmed, and as business arising out of them dealt with. Correspondence from General Secretary was read and discussed, also resolution from the Spalding Branch on gambling. The evil is not in this district, yet members agreed to support the resolution, as the evil may be introduced soon. The Instructor then spoke in his usual clear, simple, yet impressive way on the "Citizens duty on the Conscription Law." Every member expressed willingness to assist loyally in having the males in his district registered when the time came. The election of officers for the current year, and the annual report were deferred to the special meeting on the 25th May. The singing of the National Anthem terminated the meeting.

J. T. WILSON, Secretary.

BRANDON HILL (Clarendon.)—The usual monthly meeting of this Branch was held on Monday, 26th March, 1917. There were present the President, Vice-President, Secretary, and a large number of members and visitors. Mr. Schleifer,

Agricultural Instructor, was present. The minutes of the last meeting were read and confirmed. It was proposed to have an Agricultural "Social" on the evening of the 26tb April. The funds raised will be used in the purchase of a corn mill. A resolution from the Spalding Agricultural Society about the prevalence of gambling and the necessity for a modification of the vagrancy law was heartily supported by this Branch. The Authorized Persons presented their reports. The Instructor addressed the meeting. He showed samples of seed corn, and urged the members to plant as much as possible to meet the threatened world shortage. He showed the necessity of using the fork. Useless trees should be taken up, and useful ones substituted. The Instructor referred to the proposed Show to be held at May Pen. The red canker of Cocoa was next dealt with. The Instructor showed how the disease should be treated. He was heartily thanked. After a few minor matters the meeting adjourned with the siniging of the National Anthem.

J. N. LEWIS, Secretary.

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MOCHO AND BRIXTON HILL (Clarendon.)—The monthly meeting of this Branch was held on 7th April, 1917. Present: The President, J. T. Wint, Esq.; the first V.P., H. A. Barnes and six other members, including the Secretary, and one visitor. Minutes of last meeting read and confirmed. Three new members were elected and 2 old ones re-enrolled. The report of the Secretary for the past year, as also the election of Officers for the current year were postponed for next meeting, when it is hoped that there will be a good attendance. It was agreed that in future meetings be held alternately between Mocho and Brixton Hill. President brought up the problem of foodstuffs, but the subject was defered to next meeting. Meeting terminated till first Friday in May.

S. AUG. FRANCIS, Secretary.

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MAIN RIDGE (Clarendon.)—The yearly meeting of the Main Ridge Branch Society was held on Friday, the 20th April, 1917. Present, the President, Rev. A. W. Cunningham, presiding; Vice-President, Secretary, Treasurer, nine members and four visitors, one of whom afterwards became a member. The minutes of last meeting were read and confirmed. A resolution from the Spalding Branch on gambling, asking the co-operation of our Branch, was read and adopted. The President, in a masterly way, reviewed the year's work of the Society, and exhorted the members to do their best to make the Branch more vigorous for this year. Both Secretary and Treasurer gave their reports. The Treasurer showed a balance of 15/- in hand. Election of officers for the year followed. On the motion of Mr. W. D. Thomas, seconded by Mr. M. Miller, and unanimously carried, all the officers of 1916 were re-elected. Mr. Goldbourne read an extract from March Journal on praedial larceny. Meeting adjourned till May 18, 1917. Place, Comfort. Time, 8 o'clock a.m.

H. A. ANGLIN, Secretary.

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TRINITY VILLE (St. Thomas.)—The regular monthly meeting of this Branch was held on the 4th March, 1917, in the Government Schoolroom. There were present, Messrs. W. A. R. Carr, Instructor; A. P. Hanson, Agricultural Instructor; 8 members, the Secretary and one visitor. Read and confirmed minutes of the last meeting. Read and dealt with correspondence. Read resolution from the Spalding Branch *re* the gambling evil. The matter was discussed at length. It was agreed to reply stating that this community does not suffer from such a vice and further this Branch is of the opinion that the Vagrancy Law is working satisfactorily. The President gave notice that in order to facilitate the Instructor, the day for the regular monthly meeting would be changed from Friday to Wednesday. Mr. Hanson gave his usual address advising the planting of foodstuffs, especially at this time, and pointed out that by doing it in a systematic manner money could be earned. It was agreed that the annual meeting be held on Friday, May 4, 1917, at the usual place and hour. The meeting then terminated.

J. T. EDMAN, Secretary.

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SOMERSET (St. Thomas.)—Annual meeting Somerset Schoolroom April 3, 1917. Present: President, Vice-President, Treasurer, the Instructor, A. P. Hanson, Esq., Secretary, 22 members, 2 visitors. Minutes read and confirmed. Four new members elected. Read correspondence from Spalding Branch re gambling. Secretary was instructed to reply supporting the resolution. Decided to start Penny Bank as soon as pass books, etc., arrive. Secretary read annual report. Very satisfactory, it was adopted. Financial statement was submitted, audited by Mr. Black and found correct. This was also accepted. Retiring President gave stirring address and vacated the Chair. Mr. Black, Vice-President, presided pro tem. Mr. Hanson moved vote of thanks to retiring officers. All the officers were re-elected. Agreed to purchase headed circulars and receipt book for the Society's use. The Instructor

encouragingly addressed the meeting on "Crops"—red peas, corn and sweet potatoes; showed the result of one well prepared and cared acre of land if these were planted. The meeting closed with the National Anthem. J. A. TELFER, Secretary.

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THORNTON (St. Thomas.)—The annual meeting of this Branch was held in the schoolroom at 6 p.m. on Wednesday, the 11th inst. Present, L. A. Wates, Esq., Instructor and 16 members. Mr. N. A. Patterson, V.P., presided. Rules were made for the working of the grindstone. The Instructor impressed on the members the necessity for planting increased quantitis of foodstuffs. The hour of meeting was changed from 6 p.m. to 7 a.m., to suit the convenience of Mr. Wates. A committee was formed to look after competitions for the year. The Authorized Persons presented their reports. The officers for last year were re-elected to serve for the current year. JAS. BROWN, Secretary.

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BATH (St. Thomas.)—The regular monthly meeting of this Branch was held in the Schoolroom, Bath, on the 19th April, 1917, at 7 p.m. There were present: Messrs. M. G. Beckford, President, presiding; Geo. R. Groves, 1st V.P., the Treasurer, Secretary, twenty other members and over a dozen visitors. The minutes of the last meeting were read and confirmed, and matters arising out of these discussed and dealt with. *Re* the resolution, gambling from the Spalding Branch, it was unanimously decided to give all the support possible. The President gave notice that he would move at the regular meeting in June, that the meetings be held on the second Thursday in each month instead of on the third Thursday as at present. The Instructor, Mr. Wates, then addressed the meeting on the necessity for co-operation, showing how this could be effected in various ways. The reading of paragraphs from the March Journal proved very interesting and elicited an educative discussion among the planters present. The meeting then adjourned.
R. EVAN WATSON, Secretary.

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WHITEHALL (St. Thomas.)—The last monthly meeting of this Branch was held in the schoolroom on April 18th, 1917. There were present: Messrs. L. A. Wates (Instructor), L. Anglin Barrett (President), R. J. McLean (2nd Vice-President), the Secretary, 25 members and about 40 visitors. The minutes of the last meeting were read and confirmed. Correspondence from the Spalding Branch *re* "Gambling" was read, and after some discussion, it was adopted, provided an amendment was made. A report of the past year's work was read by the Secretary. The following officers were elected for the ensuing year:—L. Anglin Barrett (President); H. N. Blake (1st Vice-President); R. J. McLean (2nd Vice-President); Joseph Thomas (Treasurer); Ethel J. E. Ryan (Secretary); R. A. E. Copeland (Asst. Secretary). Seven new members were added to the list and 6/- subscription paid in. An Association entitled "The Whitehall Agricultural Society's Co-operative Cane-Growing and Selling Association" was formed. The rules were read by the Instructor, and each one was unanimously adopted by all present. After a very enthusiastic discussion on the subject, the meeting wss brought to a close by the singing of the National Anthem. ETHEL J. E. RYAN, Secretary.

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AEOLUS VALLEY (St. Thomas.)—A special meeting of this Branch was held on 26th April. The proper officers being present, Instructor A. P. Hanson, took the chair. A copy of the Spalding Branch Society's resolution *re* gambling was submitted. The Branch gave its support. The Secretary's yearly report was read and adopted. Mr. Hanson spoke at some length on the necessity for planting more food. He outlined a system of rotation of crops that could bring the peasant proprietor £30 per acre in less than 12 months—corn and red pease together first, and then sweet potatoes and canes. A vote of thanks was accorded. The meeting adjourned. C. A. CORNIFFE, Secretary.

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BLOXBURGH (St. Andrew.)—On the 23rd March this Branch held its meeting. Rev. A. N. Shirley, presided—10 members present. After the confirmation of the minutes correspondence was dealt with and matters arising out of these dealt with. Drought has prevailed in this district from December to March, and consequently nothing can be planted. It was agreed that the Journals be sent direct to the President at Llandewy P.O. The meeting adjourned with the National Anthem.
S. ROBINSON, Secretary.

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PORT ROYAL MOUNTAINS (St. Andrew.)—The regular monthly meeting of this Branch was held in the Mt. Fletcher Schoolroom on Saturday, March 24th. There

Grey, Secretary, and A. A. Williams, Asst. Secretary; also the Instructor, Mr. A. P. Hanson and a large attendance of members. The minutes of the last meeting were read and confirmed and matters arising out of them dealt with. Correspondence was also read and dealt with. Two new members were elected. Then followed a discussion on the least possible quantity of coffee which should be accepted from small sellers—the point to be settled being whether 1-8 or 1-16 of a tub should be the minimum. Other points in connection with the Blue Mountain coffee industry were brought up and dealt with and the meeting adjourned until April 28th.

N. A. GREY, Secreta

CAMBRIDGE-WOODFORD (St. Andrew.)—In order to afford the Instructor the opportunity of attending the annual meeting of this Branch, the meeting was post-poned to the second Thursday the 12th April, 1917, and was held in the Church Hall, Woodford. There were present: Rev. S. T. A. Jones, President; Messrs. A. Linton, (Vice-President): A. P. Hanson (Instructor); the Secretary, thirteen other members and several visitors. The minutes of last meeting were read and confirmed. As arising from the minutes, arrangements were made for obtaining cassava sticks from the Dallas Branch and also the Renta yams through the Central Office. The Secretary was requested to acknowledge its receipt and to state that this Branch could not, at this juncture, support it, being in its opinion, a little too remote in its relation to Agriculture. The Secretary's annual report was presented, read, and adopted; also Treasurer's accounts. A vote of thanks was accorded the Secretary. On the request of the President, His Excellency's advice to the people *re* the probable shortage of imported food stuffs, was read. This brought forth a discussion on the requirements of the people, chief of which, is land for cultivation. As there are no Crown lands here, Mr. Linton thought that, if applied for, certain portions of the Commissioners' lands could be had on easy terms. After some comments, the President promised to approach G. P. Myers, Esq., Chairman of the Commission, on the matter at his earliest opportunity. The Chairman then declared the officers' time of service expired and vacated the Chair. The Secretary was asked to preside and conduct the election. The retiring officers were all nominated and re-elected with acclamation. Five new members were enrolled. The singing of the National Anthem brought a happy meeting to a close. R. A. CLARE, Secretary.

UPPER ST. JOHN'S (St. Catherine.)—The annual meeting of this Branch was held on the 10th April. Present, Rev. L. M. Beverly, President; H. L. Mossman, Agricultural Instructor; E. Thos. Hamilton, Secretary and Treasurer; 14 members and four visitors. Minutes of the previous meeting were read and confirmed. Correspondence was also read. The election of officers then followed. It was suggested that the President, Secretary and Treasurer be re-elected. This was agreed on, and they were re-elected. Mr. H. E. Wisdom was nominated and elected Vice-President. Subscriptions were received. A new member was elected. Authorized Persons presented reports. Instructor addressed the meeting on sugar. Other matters were dealt with and the meeting terminated.

E. THOS. HAMILTON, Secretary.

CAVE RIVER (St. Ann.)—At a special meeting of this Branch there were present the Instructor, Secretary, 7 members and four visitors. In the absence of the President and Vice-Presidents, Mr. J. Wallace was asked to take the Chair. After the reading of the minutes of the previous meeting, Mr. Wallace enquired the reason why reports from this branch did not appear more frequently in the Journals. The Instructor explained the cause and also the reason why the branch was classed among those in St. Ann instead of Clarendon, and was thanked for the explanations. Following this he gave a general review of the present situation, and emphasized the necessity for planting extensively. The meeting terminated in the usual way.

W. H. CLARKE, Secretary.

GINGER HILL (St. Elizabeth.)—The annual meeting of this Branch came off at Ginger Hill at the usual place on Friday, April 13th, when there were present fifteen members and the Agricultural Instructor. Mr. E. L. Salmon (V.P.), presided and gave a few remarks at the opening of the meeting. The minutes of the previous meeting were taken as read and confirmed. Matters arising out of the previous minutes *re* road were dealt with. Correspondence from the Secretary of the Parent Society was submitted. Correspondence also from the Secretary of the Spalding Branch with resolution attached concerning gambling was submitted and adopted. Afterwards the election of officers took place and all the officers for the past year were again elected with the exception of Mr. A. Hines, a neighbouring Schoolmaster, who was removed entirely from the neighbourhood, and Mr. Jacob Barracks was

elected V.P. in his stead. The Agricultural Instructor delivered a very interesting and forcible address about the extension of cultivations. He showed that as America is gone into the war and Jamaica planters have to be more persistent in the planting of various crops to support this Island with foodstuffs in the future. The Secretary submitted his yearly report, which was adopted. The Chairman reported that a member who planted 3 lbs of Irish potatoes after it was matured got 18lbs., another who planted 2½ lbs got 15 lbs. The Agricultural Instructor read articles issued in the Journal for March about a cane planter from Maldon whose way of cultivating is worthy of imitation. He also visited the school garden and the meeting came to a close with the singing of the National Anthem.

ROBERT L. GORDON, Secretary.

DUANVALE (Trelawny). The Annual Meeting of this Society was held on the 9th of April, 9917. Present: Mr. J. Anson, Vice-President, in the Chair; the Treasurer, Instructor, Secretary, sixteen other members, and some visitors. The Meeting again dealt with the matter re the removal of the corn mill from Mr. Reid's to Mrs. Clark's. After a lengthy discussion, it was agreed that Mr. A. Marrett be empowered to remove and put up the mill at the cost of 10/-, and that the said amount together with any extra expenses be deducted from the Society's funds. The Instructor stated that he had written to the Hon. Guy Ewen about the sale of the Crown lands, but he had not received any reply yet. Eleven of the members entered into the Irish Potato Competition. After the Instructor, aided by the Secretary, had judged the exhibits, Mr. R. S. Small was pronounced winner of the first prize of 2/6, and Mr. Alfred Smart winner of the second prize of 1/6. They were both highly congratulated by the Instructor and the Secretary. A satisfactory financial statement for the year was read by the Secretary, which showed a total income of £4 13. 0d. and an expenditure of 19/-, leaving a balance of £3 14s. in hand. After the Instructor had returned thanks to the officers on behalf of the Society for their services during the past year, they were all unanimously re-elected to serve for another year. Nearly all the members renewed their membership and some paid in their subscriptions. The Instructor again urged the members to plant! plant! plant! in view of the serious war conditions. The Secretary in fitting terms next moved a hearty vote of thanks to the Instructor for his very necessary attendance, and invaluable help in every possible way to the Society during the past year. This was seconded by the Chairman. The Instructor replied suitably, and the meeting terminated with the National Anthem.

L. U. WELSH, Secretary.

TROY (Trelawny). The annual meeting of this Branch was held in the Troy School room on the 17th April. There were 11 members present, including the officers. The minutes of the last meeting were read and confirmed. Mr. Powell stated seed potatoes were served out to all who applied and the remainder planted in the school garden. Cabbage seeds were also distributed as far as they could go. The President informed the meeting that the Governor has sent out circulars urging the people to cultivate and suggested that this branch should represent to the Government through the Parent Society, the need of land for cultivation. It was decided that this matter be left over till next meeting. The Secretary read the report of the working of the branch for the last year, which was adopted and ordered to be published. The Treasurer's presented his report. The names of members for the year were enrolled. The President vacated the chair and the 2nd V.P., was asked to take the chair. The members then proceeded to election of officers. The following were elected: Rev. R. S. Bailey, President; Mr. C. J. Carter, 1st Vice-President; T. Pinnock, 2nd Vice-President; Mr. S. A. Powell, Secretary and Mr. E. A. Henry, Asst. Secretary. All the officers thanked the members for the confidence reposed in them. The meeting was brought to a close in the usual manner.

T. PINNOCK, Retiring Secretary.

Notes from the following Branches have also been received but cannot be published owing to the lack of space:—Duncans, Jackson Town, Waldensia (Trelawny); Enfield, Preston, Benbow (St. Mary); Sturge Town (St. Ann); Cambridge (St. James); Mt. James, Gordon Town (St. Andrew); Rural Hill (Portland); Comfort Hall (Manchester).